E-Notebook

Enterprise and Desktop

Chem & Bio Office Enterprise 2008
Decision Support Platform
Enterprise 10

User and Administrator Guide

CambridgeSoft®
www.cambridgesoft.com

Contents

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Preface

About the E-Notebook Guide

Welcome to the E-Notebook 10.0 User and Administrator Guide. Inside this guide, you will find a full description of E-Notebook, its features, and complete instructions on how to use them. This guide is available in print (this file), CHM, and Web-based format.

- Download in CHM format
- Download in PDF format

The E-Notebook Guide is organized into three main portions:

- Introducing E-Notebook – provides an overview of E-Notebook, including new features and E-Notebook terminology.
- E-Notebook User Guide – provides detailed instructions for using E-Notebook.
- E-Notebook Administrator Guide – provides detailed instructions for customizing E-Notebook.

Enterprise versions only:

In addition, this guide contains instructions for using the Reagent Selector and Combi in E-Notebook. (Each of these add-in features is sold as a separate component).

- Introducing the Reagent Selector - allows you to search ChemACX for chemical structures, and to add their properties and structures to E-Notebook.
- Introducing Combi for E-Notebook - makes it possible for you to set up and manage combinational chemistry libraries in E-Notebook.

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Getting Started

E-Notebook is an electronic version of the familiar paper notebook that scientists have traditionally used to keep notes in the laboratory. E-Notebook makes it possible for you to manage diverse types of data on electronic pages that are much like the pages of a paper notebook. The electronic pages make it easy to organize information and streamline your workflow. With E-Notebook, you can set up notebooks and pages to manage information about organic syntheses and related information such as stoichiometry calculations, reaction preps, spectra, analytical methods, notes, and spreadsheets.

E-Notebook Features

E-Notebook has many advantages over traditional, paper notebooks. Since E-Notebook has electronic rather than paper pages, you can conduct searches by substructure, key word, date, and so on. You can set up templates to avoid reentering information that you often use. E-Notebook fully automates stoichiometric calculations. E-Notebook also provides a full audit trail and change tracking features to maintain compliance with 21 CFR Part 11.

With E-Notebook, you can create a customized electronic notebook that matches your workflow. You can develop new fields to manage specialized types of data, and configure your own forms to manage the information that is important to you. You can also add your own data analysis tools and customized searches to E-Notebook.

You can use E-Notebook to organize a wide variety of other information critical to your work processes as well. For example, common reactants used in reaction preps can be stored in the E-Notebook database and shared among researchers. In large enterprises, E-Notebook can be configured to both supply and retrieve information from other Enterprise systems, such as chemical registration or chemical inventory management systems.

E-Notebook supports the Oracle database format.

E-Notebook Overview

E-Notebook manages numerous types of data on electronic pages that are much like the pages of a traditional, paper notebook. This information is organized into sets of related items called collections.

Examples of some common types of E-Notebook Collections are:

- Notebook and Page
- Therapeutic Area
- Project
- Experiment

- Reaction Scheme
- Synthesis

For example, you could create a collection that contains all of the reaction steps for a specific synthesis. Typically, primary research data is stored in Experiments or Pages, which are organized within Notebooks, just like the paper pages in paper notebooks. In this case, the synthesis could be a Notebook, and each of the steps could be a Page. Each of the Pages may come from a different Notebook and may have been created by a different Chemist, but the Notebook for this, particular synthesis could collect all of these Pages in a single place.

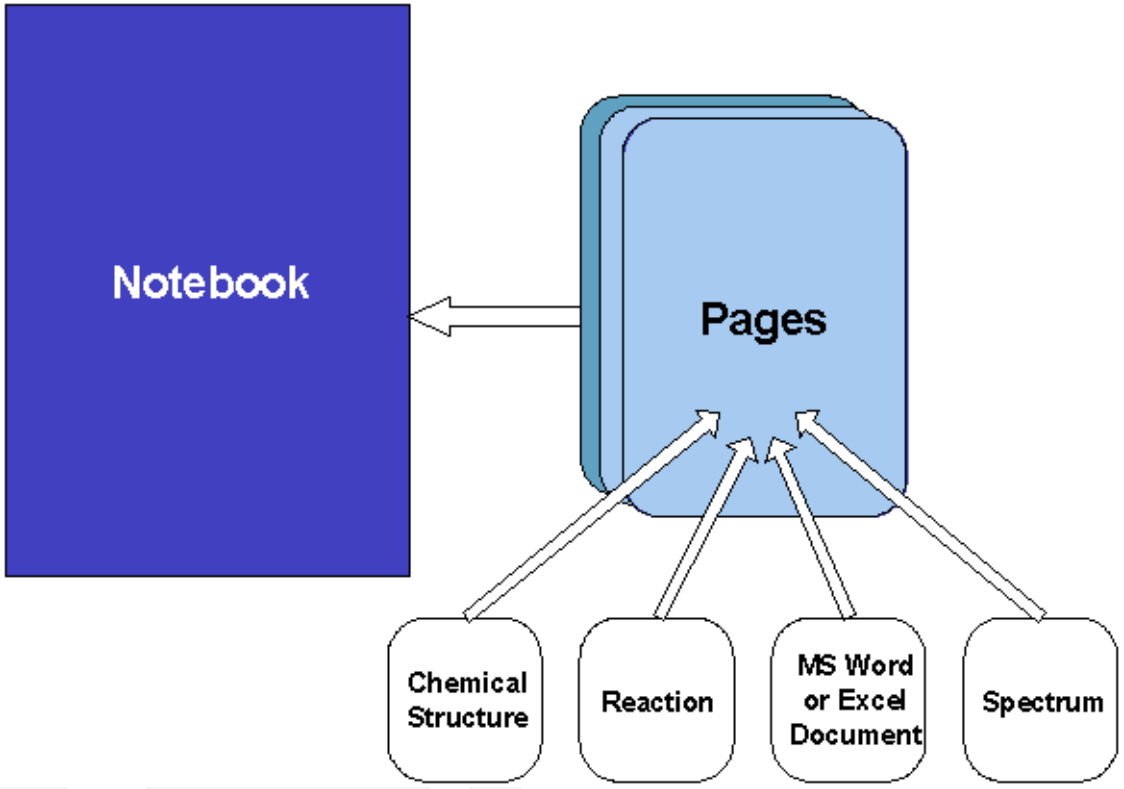
You can organize collections in other ways, too. For example, you may want to create a collection of all of the syntheses that lead to a certain product, or all of the E-Notebook users who are working on a specific project. E-Notebook lets you to set up these relationships easily.

Collections are extremely flexible, because they are designed to allow you to organize your information in the way that is best suited to your workflow. E-Notebook allows you to browse through collections and to search them for important information. Also, you can create references to them, duplicate them, and, to prevent further changes, you can transition them to a closed, read-only state.

Just as you would use pages in a paper notebook for recording various types of data, you can use sections in E-Notebook for recording reactions, spectra, or any other kind of information. For example, within an experiment, there may be sections for Reactions, notes, reactants, etc. — whatever you need to record and display your information the way you would with a paper notebook. You can also have the option to use templates, so that sections are set up automatically and uniformly with each new experiment you create.

Your system configuration determines the types of collections and sections that you can create within E-Notebook and the rules that define their contents. The permission to view, edit, and create collections can be set up on a per-

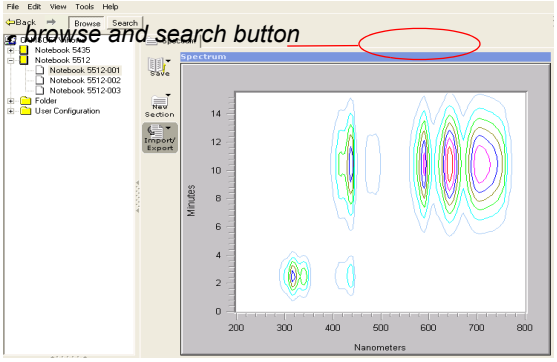
collection basis.



Navigation Overview

E-Notebook is composed of two, main areas — Browse and Search— each of which is represented by a button at the top of the screen.

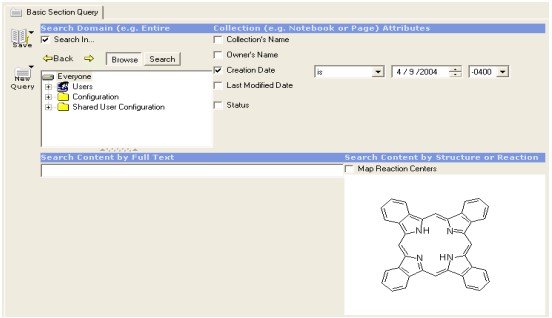
The **Browse** area displays the collections, organized in a tree structure. To expand a collection and view its contents, either double-click it or click the plus sign next to it. Clicking an individual collection allows you to view and/or edit it in the right frame. There are a number of options for specifying your view of the Collection Tree. See "Browsing the Collection Tree" on page 14 for more information.



browse and search button

From within the **Search** area, you can construct a query to search for information. For example,

you may want to search for all of the sections that contain a certain structure, or all of the collections created by a particular user. When you run a query, you can save the results list and the query itself. You can click any item in the results list to browse to that item.



NOTE: clear section icon is not in the Enterprise version.

Certain menus in E-Notebook are accessed when a particular item or icon is right-clicking particular items or icons. For example, right-click any collection in the Collection Tree to display the collection menu.

To expand the size of a field in a section:

- Double-click the titlebar of the field.
- The field expands to take up the entire section area, increasing your working space.

To shrink the field:

- Double-click the titlebar again.

Getting Started in E-Notebook

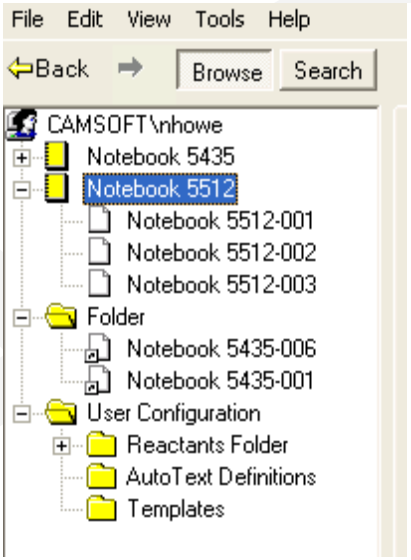
To start E-Notebook, you must log in. Then, you can begin to browse or search through E-Notebook.

Depending upon your particular E-Notebook setup, you may be logging-in one of two ways.

Start Menu Login

To log in from the Windows Start menu:

1. Go to Start > All Programs. The programs you may launch are displayed.
2. Select ChemOffice 2008, then E-Notebook Ultra. You are logged into E-Notebook. The Collection Tree appears, displaying your Home Collection.



Logging in with Internet Explorer

To log in to E-Notebook with Internet Explorer:

1. In the address field of your browser, type in the address corresponding to E-Notebook. Either you will be logged in automatically, or the E-Notebook login page will appear, prompting you to enter your username and password.
2. If prompted, enter your username and password, then click the Enter button. The Collection tree apppears, displaying your Home Collection.

3

E-Notebook Collections

Collections

Collections in E-Notebook are sets of related items you are working with. You can have collections of notebooks, experiments, pages, folders, searches, or reactants. There is also a default collection called The User Collection. You can add your collections to the user collection.

Collections are extremely flexible, because they are designed to allow you to organize your information in the way that is best suited to your workflow. E-Notebook allows you to browse through collections and to search them for important information. Also, you can create references to them, duplicate them, and, to prevent further changes, you can transition them to a closed, read-only state

The User Collection

Each user of E-Notebook has a user collection associated with his or her own collection. Your user collection is your home collection. It appears at the top of the Collection Tree when you first log into E-Notebook.

When you select you user collection in the Collection Tree, your home page appears in the right frame. The home page displays information about you as a user, and a summary of your open pages and experiments.

You may add several different types of collections directly to your user collection:

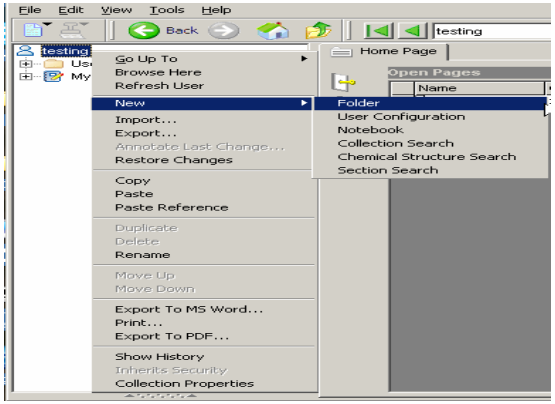
- Notebooks
- Folders
- User Configurations and AutoText Definitions
- Searches - Collection Searches, Section Searches, Text Searches, Unannotated Version Searches, Chemical Structure Searches.
- Page or Experiment Templates
- References to Notebooks
- References to Folders
- References to Page or Experiment Templates

Adding a New Collection to the User Collection

To add a new collection:

1. In the Collection Tree, right-click your user collection. A menu appears.

2. Select **New**, and then a type of collection. The new collection appears and you are prompted to rename it.



Adding a Reference within the User Collection

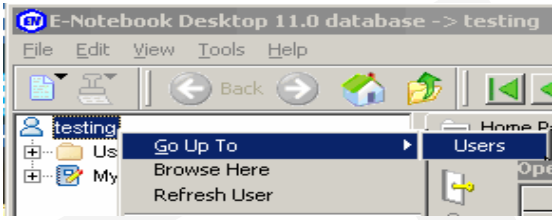
Within a collection tree, you can create a reference to a collection that exists elsewhere in the tree. The reference acts as a shortcut to the original collection, and it reflects any changes that are made to the original. Also, if you have editing privileges to the original, any changes made to the reference are reflected in the original.

1. In the Collection Tree, click the Notebook, Folder, or Template to which you wish to create the reference.
2. While holding the CONTROL and SHIFT keys, drag the collection until the user collection is highlighted.
3. Release the mouse. The Reference appears in the Collection Tree.

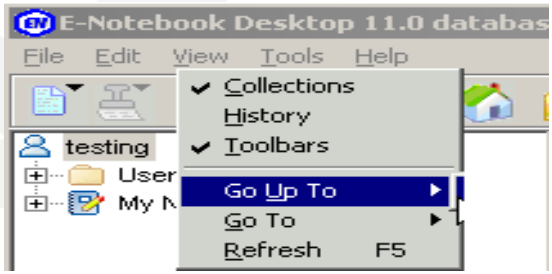
Alternatively, you may right-click the collection you wish to reference, and select **Copy** from the collection menu. Then, right-click the user collection and select **Paste Reference**.

Browsing up to the User Group

If you have the appropriate security permissions, you may browse up to the next highest level in the Collection Tree and view the user group at that level. To do this, right click your user collection, and select **Go Up To**, and then the name of your user group.



Alternatively, you may select **View** from the menubar, and then **Go Up To**.



Notebooks

Notebooks contain Page or Experiment collections. Each Notebook has a table of contents associated with it, which displays summary information for each collection in the Notebook.

Creating a Notebook

To create a new Notebook collection:

1. In the Collection Tree, right-click your user collection. A menu appears.
2. Select **New>Notebook**. A new Notebook collection appears and you are prompted to rename it. Its Table of Contents section appears in the right frame.

If you would like to create a new Page/Experiment within the Notebook, simply click the New Page icon.

Each Notebook has a Table of Contents section associated with it. Double-click the number associated with any of the contained Pages/Experiments listed to navigate to that Page/Experiment. You may also print the Table of Contents see "Printing Sections" for more information.

When you rename a Notebook, the names of the pages or experiments within it will change to match the name of the Notebook.

Pages and Experiments

Pages and experiments in E-Notebook may contain several different types of sections for experimental data.

Creating a Page or Experiment

To create a new pages or experiment collection:

1. In the Collection Tree, right-click the Notebook collection to which you would like to add the page or experiment. A menu appears.
2. Select **New>Page** (or Experiment). A new Page or Experiment collection appears within the Notebook. It is numbered automatically.

You may associate several types of sections with the Page/Experiment:

- Reaction Section
- MS Word Document Section
- Ancillary Data Section
- Spectrum and Spectra Sections
- Table Section
- MS Excel Spreadsheet Section

To create a new Page or Experiment collection from a template:

1. In the Collection Tree, click the template to select it.
2. Drag the template into the Notebook. A new Page or Experiment is created, based on the template.

Alternatively, you may right-click the template and select **Copy**. Then, right-click the Notebook and select **Paste**. (See “Templates” on page 24 for information about creating the initial template).

Close and Reopen Pages/Experiments

Pages and Experiments have several states that define their lifecycles. You may perform transitions on a Page or Experiment to move it from one state to another.

- **Open** – the Open state may have an optional annotation, it is write only, so that you may provide a reason for a change you wish
- **Closed** – the Closed state may be read-only. It may be possible to edit the collection while it is in this state.
- **Reopened** – writable, required annotation of changes, changes visible on the screen and in the printed copy. (See "Changes and Audit Trail" for information about visualization of changes and providing annotation).

Folders

You can use folders to organize and manage other types of collections:

- Other folders

- Searches – Collection Searches, Section Searches, Text Searches, Chemical Structure Searches, Unannotated Version Searches
- References to any type of collection

Creating a Folder

To create a new folder collection:

1. In the Collection Tree, right-click your user collection.

   A menu appears.

2. Click **New>Folder**.

   A new Folder collection appears and you are prompted to rename it.

Or, you may right-click an existing Folder collection and click New>Folder, to create a Folder within a Folder.

Adding a Reference to a Folder

You may add references to a folder if, for example, you would like to keep the information from several Pages/Experiments together, but the Pages/Experiments exist in separate notebooks.

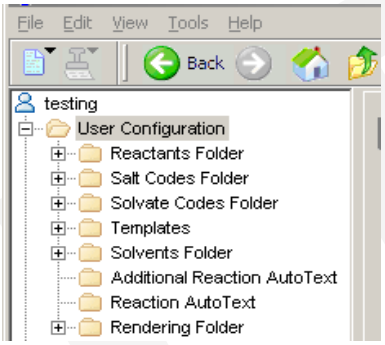
1. In the Collection Tree, click the Collection to which you want to create the reference.
2. While holding the CONTROL and SHIFT keys, drag the collection until the folder collection is highlighted.
3. Release the mouse. The Reference appears in the Collection Tree.

Alternatively, you may right-click the collection you want to reference, and select **Copy** from the collection menu. Then, right-click the folder collection and select **Paste Reference**.

The User Configuration Folder

Within your user collection, there is a User Configuration Folder, which can contain Reactants, AutoText, and Templates.

To expand your User Configuration folder and view its contents, either double-click it in the Collection Tree or click the plus sign next to it.



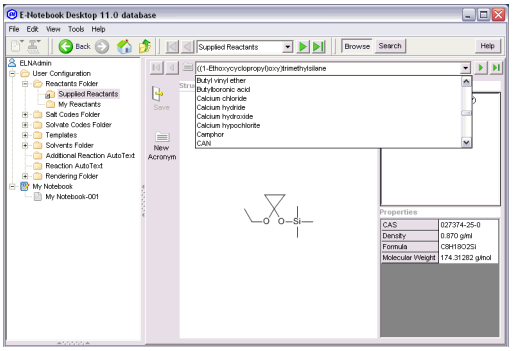
- **Reactants Folder** – contains reactants whose structures and properties you can add to Reaction Sections. See "Reaction Sections" for information.
- **AutoText Definitions** – contains predefined text fragments that you can reuse to simplify text entry in, for example procedure text. See “Creating New Autotext Definitions” on page 42 for information about configuring AutoText.
- **Templates folder** – contains templates of various types that you can use to avoid unnecessary reentry of data. See "Templates" for more information.

Reactants Collections

Reactants are named shortcuts for a commonly used compounds. These could be either common reagents, or named compounds that you use frequently, and are kept in the **Reactants Folder** in the Collection Tree.

You may populate reaction sections with the properties of reactants. See “Reaction Sections” on page 31 for more information.

E-Notebook provides 2477 commonly used reactants in the **Supplied Reactants folder**.



NOTE: In the above figure, E-Notebook Desktop version shows “ELNAdmin” whereas in the Enterprise version “System Administrator” is shown.

Adding a New Reactant to an Existing Reactant Collection

To add a new reactant section to an existing collection.

1. Browse to the Reactants collection to which you want to add the Reactant. Click the collection in the Collection Tree to select it. The Reactants collection appears, with the existing reactants displayed in the right frame.
2. In the right frame, click the **New Acronym** button. A new reactant section appears.
3. To rename the section, right-click the section menu icon and select **Rename Section** from the menu that appears. Then type in a name.
4. Draw or import the structure using the

ChemDraw tools. The formula and molecular weight properties are updated automatically. The compound name may be updated as well. The compound name will be displayed in the table of contents for the Reactants Folder that contains this reactant. (Click the Reactants Folder in the Collection Tree to view its table of contents)

Adding a new Reactant Collection

You can add a new Reactant Collection to your User Configuration folder in E-Notebook. To add a new Reactant Collection:

1. Right-click the Reactants Folder and select **New>Reactants**. A Reactants collection appears, and you are prompted to rename it.
2. Enter a name for the Reactants collection.
3. Click the New Reactant tool in the right frame. A new Reactant section appears.

You may populate reaction sections with the properties of reactants. See “Reaction Sections” on page 31 for more information.

Working with a Table of Contents

E-Notebook collections often have Table of Contents sections associated with them. The Table of Contents lists all of the collections that fall directly within the selected collection in the Collection Tree. For example, if a Notebook contains Experiments, all of the experiments in the Notebook will be listed. Or, if a Folder contains templates, all of the templates in the Folder will be listed.

Double-click the link by any of the contained collections listed to navigate to that collection. You may also print the Table of Contents to

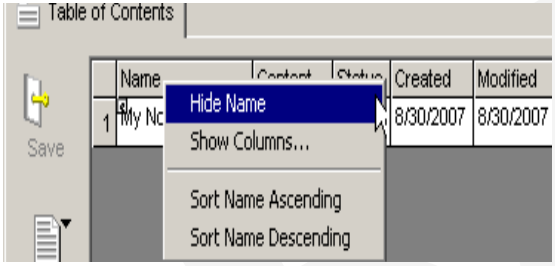
create a hardcopy of it; see “Printing Sections” on page 67 for more information.

If you want, you can customize a Table of Contents to display only the columns that are of interest to you. You can also sort items in the Table of Contents in either an ascending or a descending order.

Hiding Columns

To hide columns in the Table of Contents:

1. Right-click the column you want to hide. A menu appears.
2. Select **Hide>** followed by the name of the column. The screen refreshes and the column is hidden.



Showing Columns

To show additional columns that are hidden in the Table of Contents.

1. Right-click one of the columns in the Table of Contents. A menu appears.
2. Select **Show Columns**. The Show Columns dialog appears, listing the columns you may select for display in the Table of Contents. The columns that are currently displayed are denoted with checkmarks.
3. Select and deselect columns to customize the Table of Contents display. The columns you selected appear with checkmarks next to them.
4. Click **OK** to close the dialog. The dialog closes, and the screen refreshes to display the additional columns.

Sorting Items in the TOC

You may sort items in the TOC in either an ascending or descending order. To sort items in an ascending order:

1. Right-click the column by which you wish to sort the Table of Contents. A menu appears.
2. Select **Sort Ascending**. The items are sorted in ascending order according to the column you selected.

To sort items in an descending order:

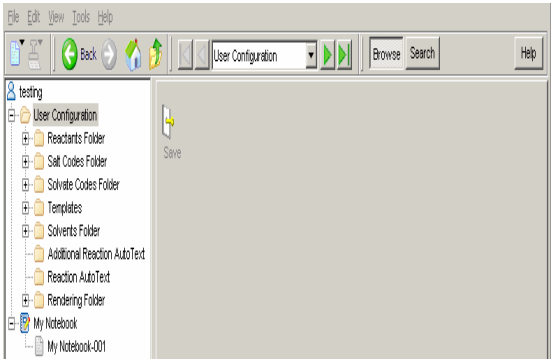
1. Right-click the column by which you wish to sort the Table of Contents. A menu appears.
2. Select **Sort Descending**. The items are sorted in descending order by the column you selected.

Browsing the Collection Tree

Collections and their contents are organized in a tree structure, called the Collection Tree, on the left side of the screen. E-Notebook offers a number of options for browsing collections.

To begin browsing collections:

- Click the Browse button at the top of the screen. The Collection Tree appears.



- Use the Back and Forward arrows to the left of the Browse button to navigate the Collection Tree view. These arrows perform a similar function for the collection tree that the Back and Forward web browser buttons perform for the browser window.

NOTE: It is only possible for one E-Notebook user to edit an individual collection at a time. If another user is editing a particular Collection and you select the Collection in the tree, you will be presented with a message informing you that the Collection is locked for editing by the other user.

Showing and Hiding Collections

Using the Collection Tree, you can expand and contract collections to display only the information you want to see.

To show the contents of a collection:

- Click the plus sign next to the collection whose contents you wish to see. The collection is expanded, and you can view its contents.
- Click the minus sign next to the collection. The collection is minimized, so that you cannot see its contents.

Hiding the Collection Tree

If you want, you can hide the Collection Tree to increase the screen area you have for entering data into a section.

To hide the Collection Tree:

1. Move your cursor to the right boundary of the tree, so that the cursor becomes a double-headed arrow. ⟷
2. Double-click. The Collection Tree is hidden.

Alternatively, you may click the touchl the right-border of the Collection Tree.

To view the Collection Tree again:

1. Move your cursor to the left boundary of the section, until the double-headed arrow appears again.
2. Double-click.(Or, you may click the touchbar at the left boundary of the E-Notebook window).

The Collection Tree reappears.

Limiting Collection Browsing

Limiting the Collection Tree view can make it easier to find specific information.You can limit your browsing by selecting a root collection for the Collection Tree. The root collection becomes the highest browsing level in the Collection Tree.

To set a root for the Collection Tree:

1. Click the Browse button at the top of the screen. The Collection Tree appears.

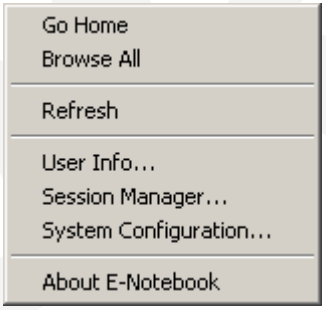
2. Right-click the collection you wish to be the root collection for browsing. A menu appears.
3. Select **Browse Here**. The collection you selected appears at the top of the collection tree.

Browsing from Home

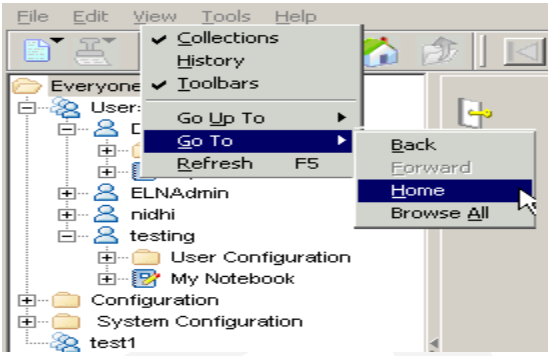
You can browse from your Home Collection, which contains all of the collections associated with you as a user of E-Notebook. This is the collection that appears when you first log in.

To browse to your Home Collection and bring the Home Collection to the top of the Collection Tree:

1. Click the Browse button. The Collection Tree appears.
2. Right-click any blank area of the Collection Tree. A menu appears.
3. Click **Go Home**. The Home Collection appears at the top of Collection Tree.



Alternatively, you may select **View>Go To>Home** from the E-Notebook menu bar.



Browsing at a Higher Level

You can browse at a higher level in the Collection Tree, and see all of the collections at that level.

To browse at a higher level:

1. Click the Browse button at the top of the screen. The Collection Tree appears.
2. Right-click a collection in the tree. A menu appears.
3. Select **Go Up To**. The collections that either contain or reference the item are listed.
4. Select the collection that you want to bring to the top of the Collection Tree. The collection you selected appears at the top of the tree. Its contained collections and contained references are displayed.

Alternatively, you may select **View>Go Up To** from the E-Notebook menu bar.

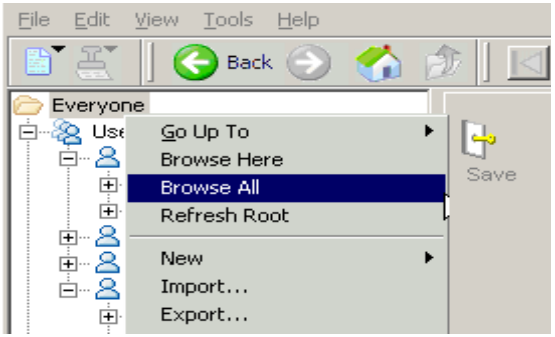
Browsing the Entire Collection Tree

Browsing the entire Collection Tree enables you to see all of the E-Notebook collections at once.

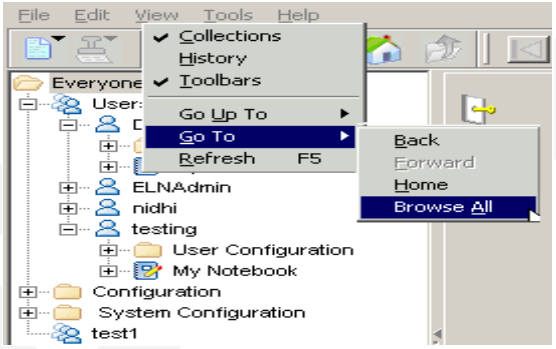
To browse the entire tree:

1. Click the Browse button at the top of the screen. The Collection Tree appears.

2. Do one of the following:
   - Right-click any blank area of the Collection tree, and select **Browse All** from the menu that appears.



   - Right-click any collection in the tree, and select **Browse All** from the menu that appears.
   - In E-Notebook main menu, select **View>Go To>Browse All**.



Note that the **Browse All** command will only be available if you have the Read privilege for the collection at the top of the collection hierarchy. If you do not have Read privilege for the collection at the top of the hierarchy, it may be necessary to conduct a collection search to view some of the collections to which you have access. See “Searching” on page 69 for more information.

Collection Behavior

In E-Notebook, there are diverse behaviors associated with Collections-such as the creating, hiding, renaming, duplicating, and moving behaviors. Your system configuration determines the rules to define the traits reflected by a collection. Therefore, depending on your system configuration, there may be some additional behaviors that these collections can show.

Auto-Numbered Collections

E-Notebook may be configured to automatically number the collections contained within a specific collection. Your system configuration determines the parameters for auto-numbering the collections.

If E-Notebook is configured to auto-number the collections, then the newly created collections will be automatically named by appending a serial number to the name of the collection that contains the newly created collection.

Collections Cannot be Deleted

In E-Notebook, you may be prevented from deleting the specific collections. Actually, your system administrator may configure some specific collections so as to prevent you from deleting them once they have been created. Therefore, the Delete command in the collection menu of such collections will be grayed out.

For example, if the Notebook collection has been configured to avoid deleting, then clicking on it will show the menu with inactive Delete option as shown:

Your system configuration determines which types of collections cannot be deleted. Also, you cannot delete a collection if references to it exist. E-Notebook, by default, is configured so

that you can not delete specific collections such as, User Collection, User Configuration Folder, Notebook Collections and Offline Folder.

Cannot be Deleted if Modified

In E-Notebook, in some cases, it may only be possible to delete collections if they have not been modified since they were created. Once the collection is modified, you are prevented from deleting such collections.In this case, the Delete option in the collection menu is inactive when collections of that type are selected.

Your system configuration determines which types of collections cannot be deleted after modification.

Collections that Cannot be Renamed

In E-Notebook, you may be prevented from renaming specific collections, for example, a collection whose name is generated by the auto-numbering feature. If you attempt to rename an auto-numbered collection, an error message to that effect appears as shown:

Your system configuration determines which types of collections cannot be renamed.

Copying Collections that Contain References

It is possible to copy collections that contain references in the collection tree in the same way as you would copy normal collections without references. The copied collection contains references to all of the collections that are contained within the collection at the time the copy is made.

In some cases, your system configuration may prevent you from copying collections that contain references to specific types of collections that are in specific states. This pertains only to references that exist in property lists and tables. It does not pertain to references in the collection tree. For example, an experiment/page collection type may be configured to prevent you from copying pages/experiments that contain references to folders that are in a Closed state.

Your system configuration determines which types of collections you can copy, and into which types of container collections you can copy them.

For more information about copying collections, see “Copying a Collection” on page 22.

4

Working with Collections

All of the information in E-Notebook is organized into collections, which are the items displayed in the Collection Tree. Collections may be notebooks, folders, experiments, pages, etc. E-Notebook allows you to browse through collections and to search them for important information.

It is possible to manage collections in a number of ways, as discussed in the following topics:

- Organizing Collections
- Templates
- Viewing Collection Properties
- Collection Security
- Performing a Collection Transition
- Importing and Exporting Collections
- Exporting a Collection or Section to MS Word
- Printing Collections

Your system configuration determines the types of collections that you can create within E-Notebook and the rules that define their contents. The permission to view, edit, and create collections can be set up by the administrator on a per-collection basis. These rules are configurable in E-Notebook.

Organizing Collections

You can organize collections in the Collection Tree to make their order meaningful to you and other E-Notebook users. You can move the collections up and down within a container collection. In some cases, collections can be moved from one container collection to another. Your system configuration determines which items can be moved into which types of collections.

Move Collections within a Container Collection

You can organize collections within a container collection by moving them up and down.

To move a collection up or down within its container:

1. Click the Browse button at the top of the screen. The Collection Tree appears.

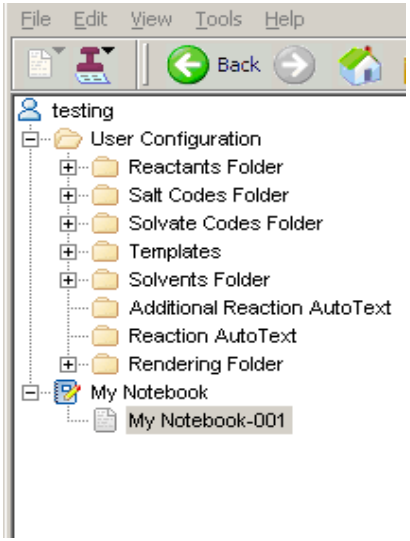


Figure 4.1 the Collection Tree

5. To expand a collection and view the items within it, either double-click the collection, or click the plus sign next to the collection.

6. Right-click the collection you wish to move up or down within the container collection. The collection menu appears.

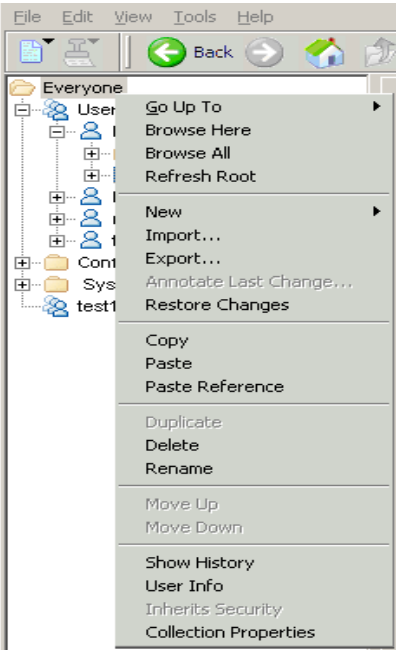


Figure 4.2 The collection menu

5. Select the appropriate option:

   - **Move Up**: moves the collection up a single position in the Collection Tree.
   - **Move Down**: moves the collection down a single position in the Collection Tree.

Alternatively you may press the CONTROL and up arrow keys to move a collection up, or the CONTROL and the down arrow keys to move a collection down.

Moving Collections between Container Collections

You can organize collections in the Collection Tree by moving them from one container collection to another. Your system configuration defines the rules that determine which collec-

tions can be moved into which types of container collections.

To move an collection between container collections:

1. Click the Browse button. The Collection Tree appears.
2. In the Collection Tree, click the collection you wish to move. The collection you wish to move is highlighted.
3. Drag the collection into the new container collection using your mouse.

If your system configuration permits the move, the collection appears in the new location. Depending upon the rules that define your system configuration, a copy or a reference may appear instead. Also, it may not be possible to move the collection into a particular type of container. If the new container will not accept the collection you are attempting to move, you will be unable to highlight the container when you attempt to drag the collection into it.

Creating a Reference within the Collection Tree

Within the collection tree, you can create a reference to a collection that exists elsewhere in the tree. The reference acts as a shortcut to the original collection, and it reflects any changes that are made to the original. Also, if you have editing privileges to the original, any changes made to the reference are reflected in the original.

To create a reference in the collection tree:

1. Click the Browse button. The Collection Tree appears.
2. Click the collection that you wish to reference. The collection is highlighted.
3. Holding down the CONTROL and SHIFT keys, drag the item into the Collection where you would like it to be referenced. A Reference to the item appears in the Collection Tree, within the collection you selected. The icon contains a small arrow, which indicates that it is a reference.

Here is another method:

1. Right-click the collection that you wish to reference. he collection menu appears.
2. Select **Copy**.
3. Right-click the collection into which to add the reference. The collection menu appears.
4. Select **Paste Reference**. The reference appears in the Collection Tree, within the container collection you selected.

NOTE: Your system configuration determines which collections can be referenced.

You can also create references to collections from property lists and tables.

Duplicating a Collection

You can duplicate a collection within its container collection in the Collection Tree. The duplicate you create contains references to all of the collections that are contained within the collection at the time the copy is made.

To duplicate an item within the same container collection:

1. Click the Browse button. The Collection Tree appears.
2. Right-click the collection that you wish to duplicate. The collection menu appears.

3. Select **Duplicate**. A copy of the collection appears within the same container collection.

NOTE: Your system configuration determines which collections can be duplicated, and where the duplicates can reside in the Collection Tree.

Copying a Collection

To copy a collection in the Collection Tree:

1. Click the Browse button. The Collection Tree appears.
2. Right-click the collection you wish to copy and select **Copy** from the menu that appears.
3. Right-click the collection that is to be the container collection for the copy.
4. Select **Paste** from the menu that appears. A copy of the collection appears in the Collection Tree, within the container you selected.

Alternatively, you may click the collection you are copying to select it. Then, while holding down the CONTROL key, drag it into a container collection.

NOTE: Your system configuration determines which types of collections you can copy, and into which types of container collections you can copy them.

Renaming a Collection

You can rename a collection to avoid a duplicate name, or simply to make the name more meaningful to you and other E-Notebook users.

To rename a collection:

1. Click the Browse button. The Collection Tree appears.
2. Right-click the collection you wish to rename. The collection menu appears.
3. Select **Rename**. You are prompted to enter another name.
4. Enter a name. The collection is renamed.

Your system configuration determines naming conventions for various types of collections. If you enter a name that does not adhere to the naming conventions, an error message appears and you are prompted to enter another name. In some cases, a name may be assigned to a collection automatically, and it may not be possible to rename the collection.

Deleting a Collection

You can delete a collection from the Collection Tree so that you manage only the information that is relevant to your current needs. Your system configuration determines which types of collections can be deleted.

To delete a collection from the Collection Tree:

1. Click the Browse button. The Collection Tree appears.
2. Right-click the collection you wish to delete. The collection menu appears.
3. Select **Delete**. If your system configuration permits it, the collection is deleted.

You may also delete a collection by clicking it in the tree to select it, and then pressing the DELETE key.

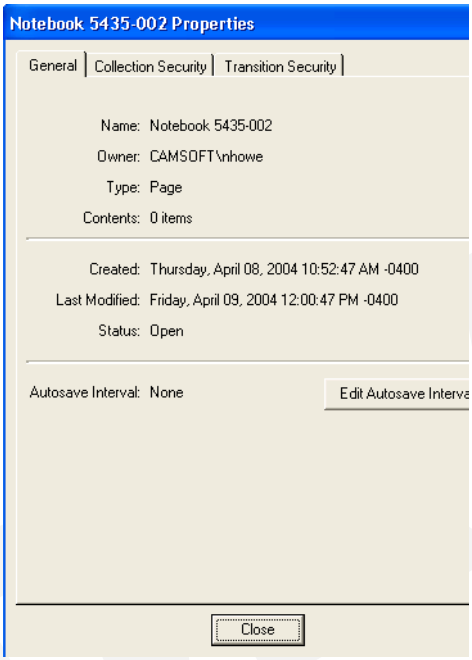
Note that you cannot delete a collection if references to it exist. Also, in some cases, it may only be possible to delete collections if they have not been modified since they were created.

Viewing Collection Properties

You can see specific information about a collection by viewing the Collection Properties. To view properties of a Collection:

1. Click the Browse button. The Collection Tree appears.
2. Right-click the item whose properties you wish to view. A menu appears.
3. Select **Collection Properties**. The General tab of the Properties dialog box appears. It contains the following information:

Table 1 Properties dialog box, General tab



- **Name** – the name of the collection.
- **Owner** – the user who created the collection.
- **Type** – the type of the Collection or Page.
- **Contents** – the number of collections contained in the collection.
- **Created** – the date on which the collection was created.
- **Last Modified** – the date on which the Collection or Page was last changed.
- **Status** – the status of the collection in its lifecycle. If no states are defined for the collection, the status is "Created".
- **Autosave Interval** – the time interval after which the collection is saved automatically.

Importing and Exporting Collections

E-Notebook lets you to export and import collections as XML files. Each XML file contains all of the data and formatting associated with the collection.

Importing a Collection

To import a collection:

1. Click the Browse button. The Collection Tree appears.
2. In the Collection Tree, right-click the collection into which you would like the collection to be imported. For example, to import an experiment into a notebook, you would right-click the Notebook. The collection menu appears.
3. Select **Import**. A dialog appears and you are prompted to select the XML file you wish to import.

4. Select the file and click the open button. The collection is imported into E-Notebook.

Exporting a Collection

To export a collection:

1. Click the Browse button. The Collection Tree appears.
2. In the Collection Tree, right-click the collection that you wish to export as an XML file. The collection menu appears.
3. Select **Export**. A dialog appears, and you are prompted to select a location for the exported file.
4. Select the location for the file and click the Save button. The collection is exported to the XML file.

NOTE: When you export a collection the export file does not include any of the contained collections. Each collection must be exported separately. For example, if you export a notebook that contains experiments, only the Notebook is exported; each Experiment must be exported as a separate XML file.

Templates

E-Notebook lets you use templates so that to avoid reentering information unnecessarily. For example, you may create a template for a particular type of Experiment or page. It may contain data and notes that you often use, or typical values for various properties.

To create a template:

1. In the Collection Tree, right-click the container collection to which you wish to add the template. The collection menu appears.
2. Select **New**. A list of the types of collections you can add appears. The types of templates you can add appear in the list, for example, Page Template, Experiment Template, etc.
3. Select the type of template you wish to add. The template is created within the container collection, and its sections appear in the right frame.
4. Edit the template to your liking.

E-Notebook is often configured so that you can drag a template of an Experiment or Page into a Notebook, thereby creating a new Experiment or Page based on the template.

You may also right-click the template in the Collection Tree and select **Copy** from the menu that appears. Then, right-click the container collection (for example, the Notebook) and select **Paste** from the menu.

Your system configuration determines which types of templates you can create as a user of E-Notebook , and which types of collections can contain them.

Form Tools

A form tool is used to perform various types of function in an E-Notebook form/field. There are several standard form tools in E-Notebook that may be associated with the section or collection types, for example, the New Section Form Tool associated with Notebook collection type or Import/Export Form Tool, which is present in new section types you create.

If you would like to perform data analysis or messaging within a particular E-Notebook section, you can associate a form tool with that section type. For example, Character Map Form Tool, this tool allows you to enter Unicode characters into a text field, property list, or table. This is in Reaction Section. New

Child Collection Form Tool, creates a new collection within the selected collection. For example, the tool may be used to create a new page within a notebook.

NOTE: Your system configuration determines the collections to which this form tool can be added.

Collection Security

You can change the access that other E-Notebook Users have to a specific collections. To change the security properties of a collection, you must have **Full Control** privileges to the collection based on your system configuration.

The default security for any new collection is **Inherits Security**, meaning that a collection has the same security profile as its parent collection in the Collection Tree. You may disable inherited security if you would like the security profile of a collection to be independent of the security profile of its parent.

You need not to disable the default before you modify security properties.

To disable inherited security:

1. Right-click the collection for which you wish to disable inherited security. A menu appears.
2. If **Inherits Security** is checked, select it to clear the checkmark. Inherits Security is disabled.

Changing Security Properties

To change the Security Properties of a collection:

1. Right-click the collection whose Security Properties you wish to change. A menu appears.
2. Select **Collection Properties**. The Collection Properties dialog box appears.
3. Click the **Collection Security** tab. The Security tab appears. The Groups and Users who have permission to access this item appear in one of two lists: Inherited Permissions and Assigned Permissions.

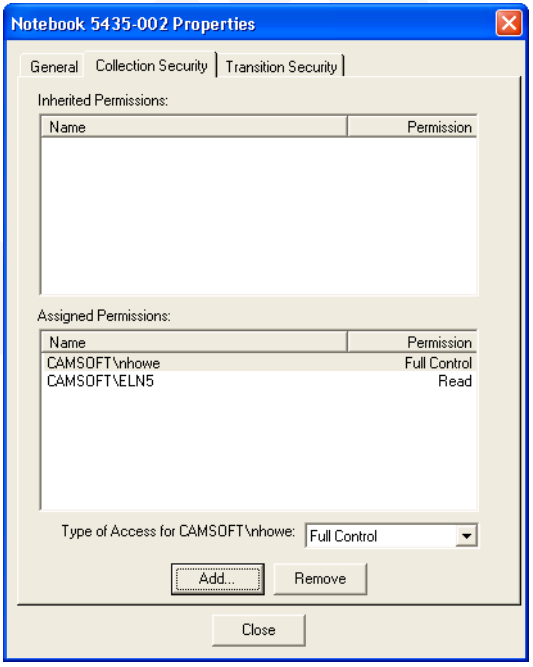


Figure 4. 3 Collection Security

Inherited Permissions are permissions inherited from the parent collection in the collection tree. These permissions can not be changed from this dialog. Only the Assigned Permissions can be changed from this dialog.

5. Do one of the following:

Desired Result	Action to take
Add a User or Group to the list	1. Click the Add button. The **Choose User or Group** dialog appears. 2. Select the appropriate user or group from the tree. You may either: • right-click within a blank portion of the tree and select **Browse All** to see all of the Users, or… • click the **Search** button and perform a search for a User or group of Users. 3. Click the Add button. 4. Select the appropriate access from the list box: • **Read** – permits a user to view the collection, but not edit it. • **Read and Write** – permits a user to view and edit the Collection. • **Full Control** – permits a user to view the collection, edit it, and assign or remove security permissions for it. The user or group and access permissions are added to the list.
Remove a User or Group from the list	1. Highlight the user or group in the list. 2. Click the Remove button.
Change the type of access for a user or group currently in the list	1. Highlight the user or group in the list of Assigned Permissions. 2. Select the appropriate access from the list box: • **Read** • **Read and Write** • **Full Control**

Transition Security

Transition security is the security applied to the collection transitions. For example, some users may be allowed to close a collection while others can also reopen the collection.

To change the transition security properties of a collection:

1. Right-click the collection whose security properties you wish to change. A menu appears.
2. Select **Collection Properties**. The Collection Properties dialog box appears.
3. Click the **Transition Security** tab. The Security tab appears. The groups and users who have permission to apply a transition to this item appear in one of two lists: Inherited Permissions, Assigned Permissions.

Inherited Permissions are inherited from the parent collection in the Collection Tree. These permissions cannot be changed from this dialog. Only the Assigned Permissions can be changed from this dialog.

Do one of the following:

Desired Result	Action to take
Add a User or Group to the list	1. Click the Add button. The **Choose User or Group** dialog appears. 2. Select the appropriate user or group from the tree. You may either: • right-click within a blank portion of the tree and select **Browse All** to see all of the Users, or… • click the **Search** button and perform a search for a User or group of Users. 3. Click the Add button. 4. Select the appropriate transition type(s). • The User or Group appears in the Assigned Permissions list, along with the transition type(s) you selected.
Remove a User or Group from the list	1. Highlight the user or group in the list. 2. Click the Remove button.

See the table for collection permission on the previous page. Step 4 changes to "Select the appropriate transition type(s). Otherwise, setting the permissions is identical.

Performing a Collection Transition

You can configure collections to have states associated with them. These states define the life cycle of the collections. For example, a Notebook may have Open and Closed states; the Open state may permit editing, and the Closed state may be a read-only state that does not allow edits. Transitions are the actions you perform to move a collection from one state to another, for example, from Open to Closed.

To perform a transition on a collection:

1. Click the Browse button. The Collection Tree appears.
2. Right-click the collection in the Collection Tree that is to undergo the transition. The collection menu appears.
3. Select the name of the transition from the menu, for example **Close**, **Print**, or **Reopen**. (The options will vary based upon your system configuration.).

NOTE: In the enterprise version, the name of transition are "Sign and Close",Sign and keep Open",View Signed versions" and "Print".

4. You may be prompted to enter additional information — such as an annotation or additional data — before the transition can proceed. If so, enter the information to proceed with the transition. The transition occurs and the collection enters the new state. You may always view the state of the collection by right-clicking it in the Collection Tree, and then selecting **Collection Properties**.

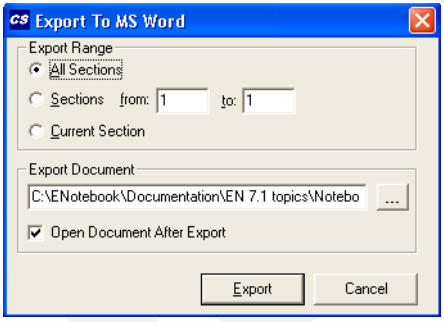
Transitions may also perform certain functions, such as printing a copy of the collection.

Your system configuration determines which transitions may be performed, and by whom.

Exporting a Collection or Section to MS Word

You can export collections and sections to MS Word, then manage them as you would MS Word documents. To export to MS Word:

1. Right-click the item (in the collection tree) containing the Section(s) you wish to export to MS Word. A menu appears.
2. Select **Export to MS Word**. You are prompted to choose a destination folder and file name.
3. Choose a folder and file name and click the Save button. You are prompted to choose an export range.



4. Select an export range. The options are:
   - **All Sections** – to export all of the sections.
   - **Sections from X to Y** – to export a range of sections, where X and Y are values you specify.
   - **Current Section** – to export only the current Section.
5. Select Open Document After Export if you would like the document to be open after the export is complete.
6. Click the Export button.

Printing Collections

To print a collection:

1. From the Collection Tree, right-click the collection. The collection menu appears.
2. Select **Print**. Your printer dialog box appears.
3. Select the printer options.
4. Select the **Page Range**:
   - **All** – prints all of the sections in the collection.
   - **Selection** – prints only the selected section.
   - **Pages** – allows you to specify a range of sections to print. For example "1-5" would print the first, five sections in the collection.
5. Make your selections and click the Print button. The collection or the portion of it you selected is printed.

NOTE: Your system configuration contains templates that determine exactly how the printed page appears.

If Visual Display of Changes is enabled, the print will include the following:

- The collection data as is exists in the current version of the collection.
- The version history, including the date and the author for each version after the baseline version. (The baseline version is the version that existed when visual display of changes began).
- A list of changes grouped by field.

In some configurations, there is a Final Print transition that automatically creates a complete printout of the collection.

5

Reaction Sections

This portion of the User Guide describes how to use the various sections or forms

in E-Notebook. A section is a form for E-Notebook data.

Just as you would use pages in a paper notebook for recording various types of data, you can use sections in E-Notebook for recording reactions, spectra, and other types of information.

Your system configuration determines the types of sections that are available in E-Notebook.

For general information about deleting, moving, and copying sections, etc., see “Working with Collections” on page 19.

You can also use templates to set up sections automatically and uniformly. See “Templates” on page 24 for more information.

Pre-configured Sections

E-Notebook comes preconfigured with a number of useful sections that you can add to your pages. Your system administrator may have modified these sections, eliminated them, or added new sections that more closely match your workflow.

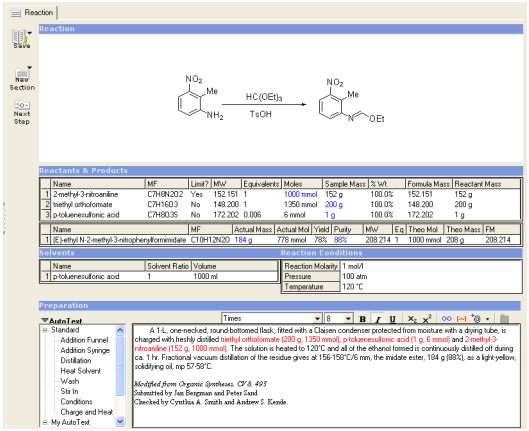
The preconfigured sections are:

- Reaction sections
- Reactant sections
- Spectrum and spectra sections
- Table sections
- MS Word Sections
- MS Excel Sections

Create a new Reaction Sections

A Reaction Section shows one step in a reaction. It contains a stoichiometry grid that analyzes the reaction drawing automatically. The AutoText feature updates the preparation text

when you change the reaction drawing and/or information in the stoichiometry grid.



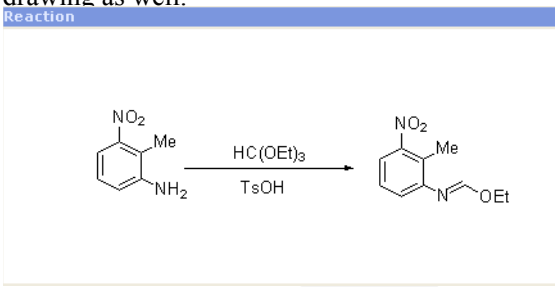
NOTE: In the Enterprise version "Batch Explorer" icon is also included below new section icon.

To create a new Reaction Section:

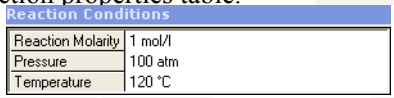
1. In the Collection Tree, click the collection to which you would like to add the reaction section.
2. Click the New Section menu icon on the left side of the screen. A menu appears, listing the sections you may add.
3. Select **Reaction**. A new blank reaction section appears in the right frame.

Within a reaction section, you can record the following information:

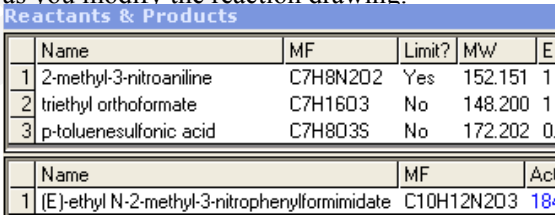
Chemical Structure – Draw and store chemical structures and reactions using the ChemDrawtoolbar. You may import a reaction drawing as well.

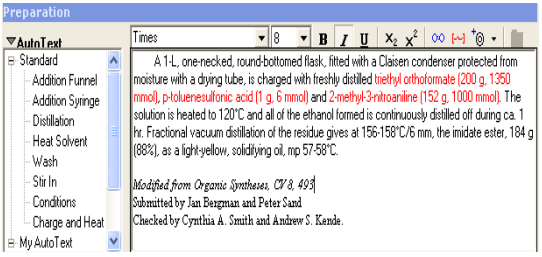


Reaction Properties List – Record pressure, temperature, and any other reaction properties in the reaction properties table.



Stoichiometry Table – The stoichiometry table calculates and stores amount, formula mass, molarity, density, volume, and many other variables. This table is populated automatically as you modify the reaction drawing.





Drawing and Analyzing Reactions

You can draw a reaction using the ChemDraw reaction field. When you draw a reaction, the stoichiometry grid is automatically populated with the properties of the reactants and products. If you remove a reactant or product from

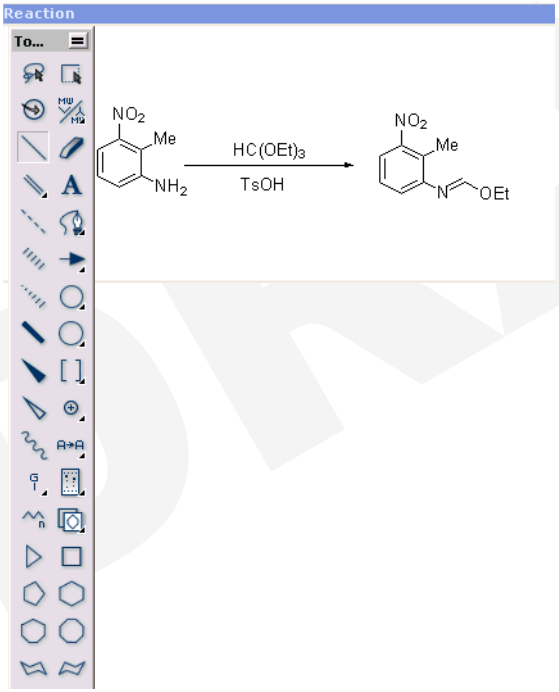
the stoichiometry grid, the corresponding structure will be removed from the reaction drawing.

The ChemDraw Toolbar allows you to create a chemical structure by connecting frequently used substructures together. For more information about using the ChemDraw Toolbar, see the ChemDraw User's Guide.

Drawing a Structure or Reaction

To draw a reaction:

1. Click within a reaction field. The ChemDraw toolbar appears.
2. Using the ChemDraw tools, draw a reaction.



TIP: To view the drawing menu, right click in the structure window. This menu allows you to, among other things, copy and paste structures.

Expanding the Drawing Window

To expand the drawing window:

1. Double-click the titlebar of the chemical structure field. The chemical structure field expands.
2. Using the ChemDraw tools, draw the structure or reaction.
3. When you are finished editing, double-click the frame of the chemical structure field to return it to its original size in the form.

Analyzing a Reaction

After you draw a chemical reaction in the reaction field of a reaction section, you can analyze the reaction. When you analyze a reaction, the Stoichiometry Grid of the reaction section is automatically populated with information about the reactants and products.

NOTE: This only occurs if information has not already been added to the Stoichiometry Table manually. For more information about entering stoichiometric data manually and adding reactant data automatically, see "Adding Information" on page 37.

Based upon the chemical drawing in the reaction field, new reactants and products are added to the stoichiometry table. By default, the names of the reactants and products are determined from the molecular formulas in the drawing.

To analyze a reaction:

1. From within a Reaction Section, click the section tool icon. A menu appears.
2. Select **Analyze Reaction**. The Stoichiometry Grid is automatically filled in.

When a value is calculated, the number of significant digits is the minimum number of significant digits for any cell in the table that has been edited manually. If none of the table cells have been edited, calculations are to four significant digits.

Name=Struct

The names of compounds you draw in a reaction can be added to the stoichiometry grid automatically, using ChemDraw's Name=Struct feature.

NOTE: You need to have ChemDraw Ultra installed on your computer to use this feature.

To convert a name to a structure:

1. Draw the structures in the reaction section.
2. Save your changes. The structure names appear in the stoichiometry grid.

If you make changes to the reaction drawing, the names will be updated automatically.

NOTE: If you manually change the name of any structure in the grid, your change will NOT be overwritten when you alter the corresponding structure drawing.

The Reaction Toolbar

The reaction toolbar provides a number of features for managing the reactants and products in your reaction section.

The reaction toolbar normally appears just below the reaction field.

See the following topics for more information.

Adding Structures

With the reaction toolbar, you can add reactants and products from your Acronyms collections in E-Notebook. There are two methods for adding a structure with the reaction toolbar.

Using the Add Dialog

The Add button brings up a dialog that lets you to select a structure and add it to your reaction section.

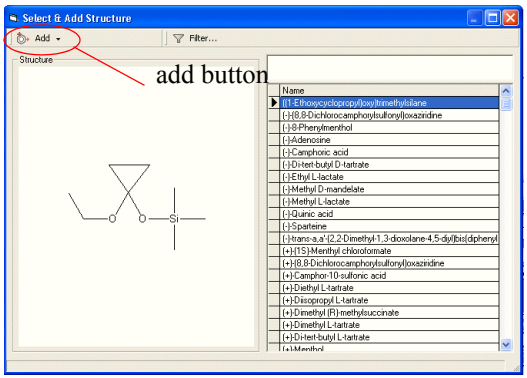
To add a structure:

1. Click the **Add** button in the reaction toolbar. The **Select and Add Structure** dialog appears, displaying the acronyms in your Reactants Folder.
2. In the right frame, click the name of the structure you want to add. The structure is selected, and its structure drawing appears.
3. Click the down arrow by the **Add** button to display options for adding the structure. The options are:

Left of Arrow as Reactant – adds the structure to the reaction drawing to the left of the arrow, and adds it to the reactants table in the grid.

Top of Arrow as Reagent – adds the structure to the reaction drawing above the arrow, and adds it to the reactants table in the grid. **Bottom of Arrow as Solvent** – adds the structure to the reaction drawing below the arrow, and adds it to the reactants table in the grid. **Right of Arrow as Product** – adds the structure to the reaction drawing to the right of the arrow, and adds it to the products table in the grid. **To Grid as Reagent** – adds the structure to the grid only, in the reactants table. **To Grid as Solvent** – adds the structure to the grid only, in the reactants table. 4.Select the option you desire from the menu.

- Click the **Add** button. The structure is added to the reaction section in the manner you selected.



There are several options for filtering the acronyms displayed in the dialog. See “Filtering Acronyms with the Reaction Toolbar” on page 35 for more information.

Using Quick Add

With the **Quick Add** button, you can bypass the Add Structure dialog and remove several steps from the process of adding a structure to your reaction.

To add a structure with the Quick Add button:

1. Select an acronym from the dropdown list in the reaction toolbar. This dropdown lists all of the acronyms in your Reactants folder.
2. Click the down arrow by the Quick Add button. The options are:

Left of Arrow as Reactant – adds the structure to the reaction drawing to the left of the arrow, and adds it to the reactants table in the grid.

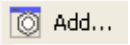
Top of Arrow as Reagent – adds the structure to the reaction drawing above the arrow, and adds it to the reactants table in the grid. **Bottom of Arrow as Solvent** – adds the structure to the reaction drawing below the arrow, and adds it to the reactants table in the grid. **Right of Arrow as Product** – adds the structure to the reaction drawing to the right of the arrow, and adds it to the products table in the grid. **To Grid as Reagent** – adds the structure to the grid only, in the reactants table. **To Grid as Solvent** – adds the structure to the grid only, in the reactants table. 3.Select the option you desired.

- Click the **Quick Add** button in the reaction toolbar. The structure you selected is added to your reaction.

Filtering Acronyms with the Reaction Toolbar

The reaction toolbar offers several options for filtering acronyms before selecting one to add to your reaction section.

To jump to a particular structure:

1. Click the 

button in the reaction toolbar. The **Select and Add Structure** dialog appears, displaying the acronyms in your Reactants Folder.
2. Begin typing the name of the structure you wish to select.The selected structure changes to match the text you have typed.

Applying a Filter

To filter the acronyms that are displayed in the dialog

1. Click the **Filter** button at the top of the dialog. The **Apply Filter** window is displayed.
2. From the dropdown list, select either **Names Starting with** or **Names Containing**.
3. Enter the text for the filter.
4. Click **OK** to close the Apply Filter window. The filtered list of acronyms is displayed.

Removing a Filter

To remove a filter:

- Click the **Remove Filter** button.
- The filter is removed, and the entire list of acronyms is displayed.

Defining a New Acronym

You can use the reaction toolbar to add new acronyms to reactants collections.

To do this:

1. In the reaction drawing, use the ChemDraw tools to select the structure you wish to define as an acronym.
2. Click the **Define** button in the reaction toolbar. A dialog appears, prompting you to select the Acronyms collection where you wish to add the new acronym.
3. Select the collection and click the **Create Here** button. The structure you selected is added to the collection. Close the dialog.

Deleting a Structure with the Reaction Toolbar

You can use the reaction toolbar to delete structures from a reaction.

To do this:

1. In the reaction drawing, use the ChemDraw toolbar to select the structure you wish to delete.
2. Click the down **Delete** button in the reaction toolbar. The structure is deleted.

The Stoichiometry Table

The stoichiometry table calculates and stores stoichiometric data for a reaction. It is filled in automatically as you modify a reaction drawing. You may change values manually as well.

You can also add reactants from the Collection Tree to the stoichiometry table.

Depending upon your system configuration, some of these properties may not appear, or additional properties may be present.

Reactant properties:

- **Reactant** – the name of the reactant.
- **MF** – the molecular formula.
- **Limit?** – a yes or no value, indicating whether the reactant is the limiting reactant.
- **MW** (Molecular Weight) – sum of the atomic masses (atomic weights) of the atoms in the molecular formula, as set forth in the molecular weight.
- **Eq** (Equivalents) – the proportion of the reactant relative to the other components in the reaction.
- **Moles** – the number of moles of the reactant.
- **Sample Mass** – the total quantity of the reactant sample.
- **Vol** (Volume) – the three-dimensional volume of the reactant, such as mL, L, etc.
- **Molarity** – the number of moles per molarity of the reactant.
- **d** (Density) – the mass per unit density of the reactant.
- **% Wt** (% by Weight) – the percentage of reactant in the sample.
- **FM** (Formula Mass) – sum of the atomic masses (atomic weights) of the atoms in the formula of the compound. This tends to be a more general term than molecular weight, and can be applied to compounds such as ionic compounds.
- **Reactant Mass** – the total quantity of the reactant.
- **Loading** – the number of reactant moles per amount of the reactant sample.

See “Numerical Units in Tables and Property Lists” on page 201 for mass units.

Product Properties:

- **Product** – the text name of the product.
- **MF** - the molecular formula.
- **Actual Mass** – the actual mass of product the reaction yields.
- **Actual Mol** – the actual number of moles of the product that the reaction yields.
- **Yield** – the ratio of the actual amount to the theoretical amount.
- **Purity** – the percentage of the actual amount that is the product.
- **MW** - the molecular weight.
- **Eq** (Equivalents) – the proportion of the product relative to the other components in the reaction.
- **Theo Mol** (Theoretical Moles) – the calculated number of moles of the product that the reaction yields.
- **Theo Mass** (Theoretical Mass) – the calculated mass of product the reaction yields.
- **FM** - the formula mass.

See the following topics for more information:

- Adding Information
- Removing Reactants and Products from the Information
- **Loading** – the number of product moles per amount of the product.

Adding Information

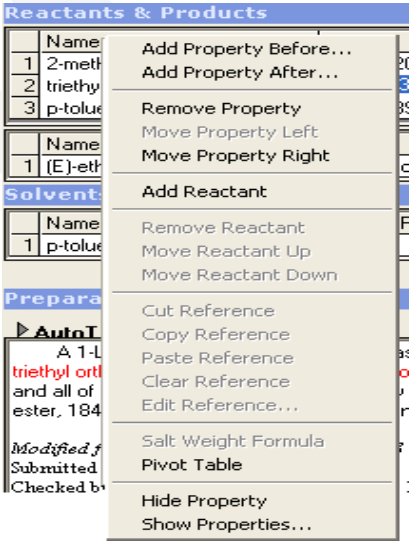
You can manually type stoichiometric information into the stoichiometry table of a reaction section, as well as add reactants from the Collection Tree.

To manually add information to a Stoichiometry Table:

1. In the reaction section, click a cell in the stoichiometry table.
2. Type the information into the cell. The information is saved, and the text is displayed in blue. If you have entered a number and there are default units associated with the property, the units are displayed. (See "Numerical Units in Tables and Property Lists" on page 201 for more information).
3. Repeat the process for other cells in the table, if necessary.

To enter reactant information into the Stoichiometry Table:

1. Right-click a cell in the Reactants section of the Stoichiometry Table. A menu appears.



2. Select **Add Reactant After** to add a reactant after the selected item, or **Add Reactant Before** to add a reactant before the selected item. A new blank row appears in the stoichiometry table.
3. Select **Add Reactant After** to add a reactant after the selected item, or **Add Reactant Before** to add a reactant before the selected

item. A new blank row appears in the stoichiometry table.

4. Type in information as above.
5. Select **Add Reactant After** to add a reactant after the selected item, or **Add Reactant Before** to add a reactant before the selected item. A new blank row appears in the stoichiometry table.

Inserting Reactants and Products from Information

To insert a reactant or product from the stoichiometry grid:

1. Right-click within the text field. A menu appears.
2. Select **Insert**, followed by the name of the reactant or product.

The name and properties of the reactant or product you selected are inserted. The text appears in red, and will be updated automatically if you change the name or properties in the stoichiometry grid

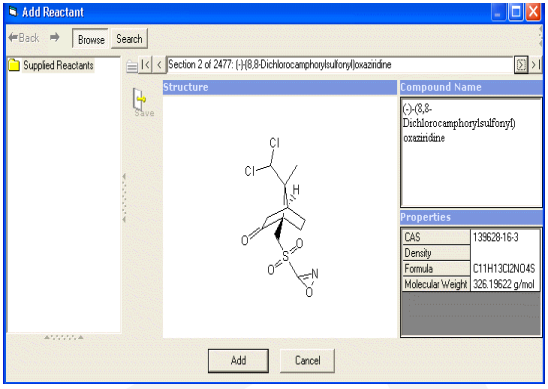
Inserting New Reactants or Products

To insert a new reactant or product that is not yet present in the stoichiometry grid:

- Right-click within the text field.

Select **Insert New Reactant...** or **Insert New Product...** from the menu that appears.A dialog appears, prompting you to browse to the reactant or product you wish to select.

- Browse to the reactant or product you wish to add, and click the **Add** button. The reactant or product is inserted into the stoichiometry grid, and into the text field.



Removing Reactants and Products from the Information

You can automatically remove all of the information pertaining to a particular product or reactant from the Stoichiometry Table. If the reactant you remove is the limiting reactant in the reaction, the first remaining reactant becomes the limiting reactant.

To remove a reactant or product from the stoichiometry table:

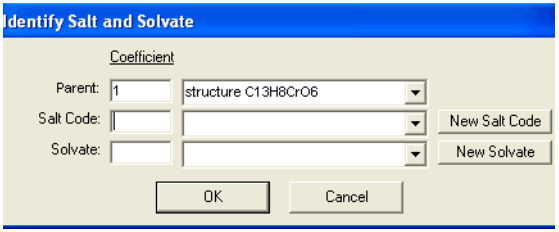
1. Right-click the reactant or product you wish to remove.A menu appears.
2. Select **Remove Product** if it is a product, or **Remove Reactant** if it is a reactant. A message appears, asking you if you are sure you want to delete the reactant or product.
3. Click **Yes**. The reactant or product is removed from the Stoichiometry Table. If it was present in the reaction drawing, it is removed from the drawing as well.

Salts and Solvates

In an E-Notebook reaction section, it is now easier to represent a compound that is present in a salt or hydrated form. You can enter a formula that accounts for salts and hydrates.

To enter a formula:

1. In the stoichiometry grid, double-click the molecular formula cell. A dialog appears.



2. Select a salt code or solvate from the drop-down list. This list displays all of the salt codes and solvates in your User Configuration folder.
3. Click **OK** to close the dialog. The formula you entered appears in the stoichiometry grid.

NOTE: Figure above and below is of Enterprise version. In the Desktop version we have "ELNAdmin instead of "System Administartor".

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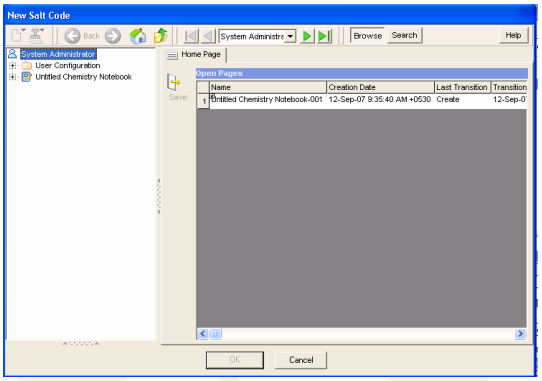
4. Select a salt code or solvate from the drop-down list. This list displays all of the salt codes and solvates in your User Configuration folder.
5. Click **OK** to close the dialog. The formula you entered appears in the stoichiometry grid.

Adding New Solvates and Salts

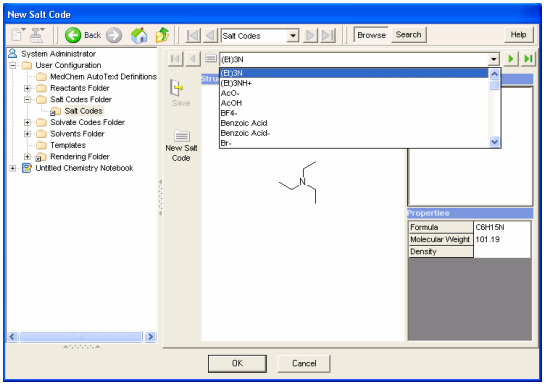
To add a solvate or salt that does not appear in the drop-down list:

- Click the **New Solvate** button. (Or, to add a new salt code, click the **New Salt Code** button) shown. A dialog appears



NOTE: Figure above and below is of Enterprise version. In the Desktop version we have "ELNAdmin instead of "System Administrator".

- you can browse to solvates or salts in your User Configuration folder.

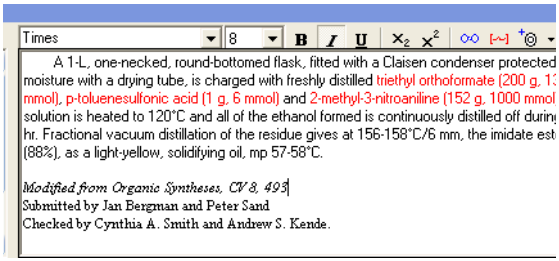


Autotext

With the Autotext feature, you can add predefined fragments of text to a field. This allows you to create the contents of a text field quickly. You may also add text that is pulled from other fields, for example, reaction proper-

ties or values in the stoichiometry grid of a reaction section. As you update the reaction drawing and the stoichiometry grid, your changes are reflected in the AutoText.

The example below shows the Preparation field of the reaction section.



When you modify reactants and products in the reaction drawing or stoichiometry grid, the AutoText will be updated automatically.

See the following topic for more information:

- Inserting New Reactants or Products with Auto Text - this topic provides instructions for adding and reactants and products in the text
- Adding Items from the AutoText Pane - provides instructions for adding AutoText items
- Inserting Links with Autotext - offers instructions for adding and managing hyperlinks in the text.
- Inserting Custom AutoText - provides instructions for using the Custom AutoText dialog.
- Creating New Autotext Definitions - provides instructions for setting up your own, custom AutoText.

Inserting New Reactants or Products with Auto Text

You can use the reactants/products button to populate the AutoText.

1. With your cursor in the text field at the point where you wish to insert the reactant or product, click the reactants/products button. A menu appears.
2. Select one of the options:
   - **Insert Reactant...** – allows you to browse to a new reactant, and add it to the text and stoichiometry grid.
   - **Insert Product...** – allows you to browse to a new product, and add it to the text and stoichiometry grid.
   - **Insert "[Reactants]" AutoText** – inserts the text "[Reactants]", which you may then right-click to select a reactant from the stoichiometry grid, or to browse to a new reactant.
   - **Insert "[Products]" AutoText** – inserts the text "[Products]", which you may then right-click to select a product from the stoichiometry grid, or to browse to a new product.

The text is updated automatically if you change the properties of the reactant or product.

Adding Items from the AutoText Pane

You can populate the text field by selecting items from the AutoText pane. If you wish to add your own custom AutoText to this pane, you can set up your own AutoText definitions. See "Creating New Autotext Definitions" on page 42.

To add AutoText items to the text field:

- Click the triangle button next to the word "AutoText" in the upper left corner of the text field.

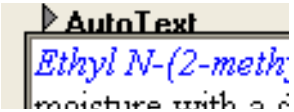
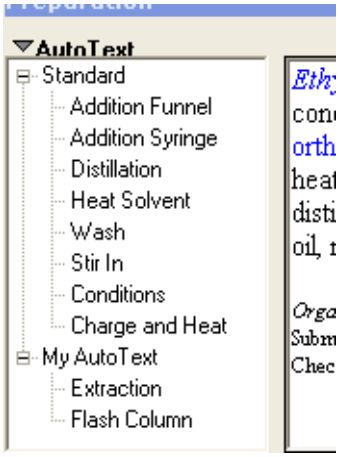
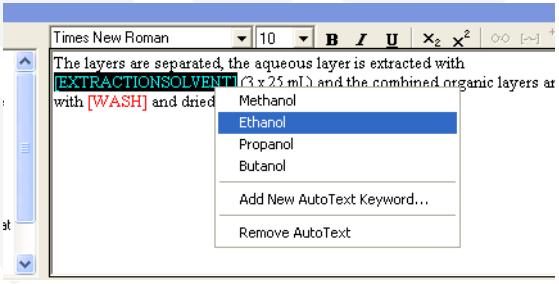


Figure 5.12 Opening the AutoText panel

- The AutoText pane appears, listing the available AutoText items.



- Double-click an item in the list to insert the corresponding AutoText. Red text that appears between brackets indicates that there are several possible values for the text. Right-click the text within brackets to view a dropdown list of the options, and select one of the values. In the example shown below, several possible options are listed for the extraction solvent.



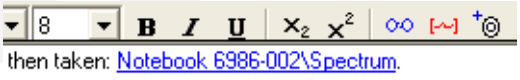
  - You may right-click the red text again to modify your selection.

Certain items in the AutoText list may refer to other data in the section. For example, double-clicking **Conditions** in the AutoText pane automatically fills the Reaction Conditions into the text field.

Inserting Links with Autotext

You can insert links in the text filed to other sections and collections in E-Notebook:

1. Click the Link button in the toolbar of the text field. A dialog appears, prompting you to select a collection or section for the target.
2. Browse to the collection or section, and click the **OK** button. A dialog appears, prompting you to enter the text that will appear with the link.
3. Enter the text or accept the default text, and click the **OK** button. The link appears within the text field.

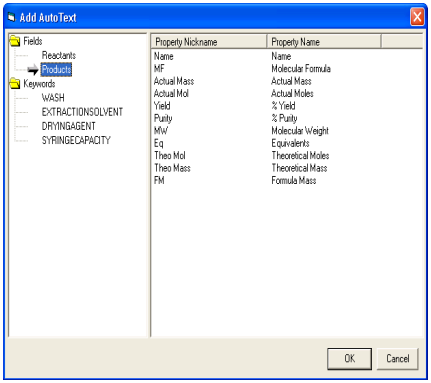


4. Double-click the link to browse to its target.This step is to validate the functioning of the link.

Alternatively, you may right-click within the text field, and select **Insert Link** from the menu that appears. Then follow the steps given above.

Inserting Custom AutoText

1. Right-click within the text field. A menu appears.
2. Select **Insert Custom AutoText**. The Add AutoText dialog appears.



3. Select one of the AutoText items in the left frame. In this example, **Products** is selected.
4. Click **OK**. The AutoText appears in the text field.
5. Right-click the AutoText to see the options associated with it.

Creating New Autotext Definitions

Depending on your system configuration, it may be possible for you to set up your own AutoText definitions to use in text fields. You can then use these predefined fragments to automatically add text to the styled text field.

1. Right-click the User Configuration and select **New>AutoText Definitions**. (Or, select an existing AutoText collection to modify by clicking the collection in the tree).
2. Enter a name for the new collection.
3. Enter the following information:

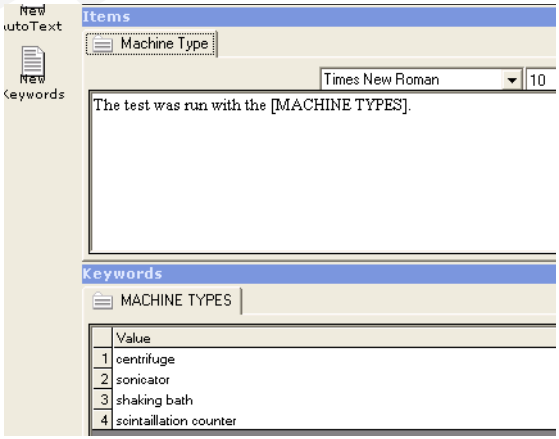
Section Type – . select a value from the drop-down list if you would like the AutoText to apply to a particular type of section exclusively. For example, you may only want to use the text in reaction sections. If you do not select a section type, the AutoText will be associated with all text fields, in all types of sections.

Field Type – . if you select a Section Type, you may select a particular field within it. If you leave the Field blank, the AutoText will apply to all text fields in the section type.

Items – . These are the AutoText items that will appear in the AutoText list. Double clicking the name of an item will fill in the corresponding text. Click the **New AutoText Item** button to add a new item.

Keywords – . These are the keywords, or choices, that you may define for a particular item. Click the **New Keywords** button to add new AutoText keywords.

In the example below, AutoText has been set up so that you may automatically enter a sentence regarding a machine type, and select from a list of several machine types. Double-click **Machine Type** in the AutoText list for any styled text field, the corresponding sentence will appear. Then, right-click **[MACHINE TYPES]** to select from the list of machine types.



Note that the title of the keywords tab must match the field descriptor exactly. In this case, MACHINE TYPES is the name of the keywords tab, and [MACHINE TYPES] appears in the AutoText item.

Autotext Based on Other Fields in the Section

You may also set up autotext that will fill in the values from property lists and tables in a section. To do this, use a field name as a keyword in an AutoText Item. The keywords and the field names must match exactly for the substitution to take effect.

PROPERTY LISTS

For the AutoText Item to populate the styled text field with all of the properties in a property list, simply use the name of the property list as the keyword in the AutoText Item. For example, assume there is a Conditions field, which is a property list that contains reaction conditions. The AutoText Item "Conditions: [CONDITIONS]" (without quotes) will fill in all of the properties in the Conditions property list - such as, "Conditions: (Pressure: 200 atm, Temperature: 100 °C)".

The keyword CONDITIONS followed by a property name, such as [CONDITIONS:Temperature], will populate the styled text field with that specific property, for example., "Temperature: 100 °C".

TABLES

As with Property Lists, the AutoText Item referring to a Table must contain bracketed UPPERCASE keywords. For example:

"[REACTANTS1] is added dropwise to a 500 ml round-bottom flask charged with [REACTANTS2] in [SOLVENT]."

[REACTANTS1], [REACTANTS2], and [SOLVENT] are replaced by the complete description of a compound from one of these tables. REACTANTS1 refers to a column in the table REACTANTS (or, if the table is pivoted with properties appearing as columns, it refers to a row). REACTANTS is the name of the table field.

In this case, the number — such as in REACTANTS1 and REACTANTS2 — is used to indicate that different compounds are to be used in the AutoText. In order to determine which reactant is to be used where more than one is present in the reactants table, the user right-clicks the keyword that appears within brackets. This displays a popup menu containing all of the possible values. Choosing a value will substitute the data. If other keywords refer to the same compound (for example, REACTANTS1), they will be substituted as well.

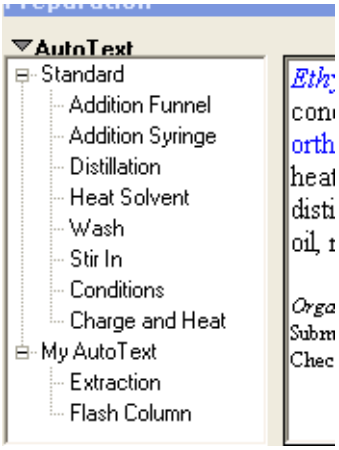
The description that populates the styled text field consists of the name (or text of the form "Reactant 1" if the name is absent) followed by a list of the properties of that compound.

To select individual properties, an AutoText Item can contain a keyword followed by a property name, for example, [REACTANTS:Amount] is replaced by the value from the Amount property for a reactant.

SECTION NAMES AS CATEGORIES

If you add multiple sections to an AutoText Collection, the section names appear as categories in the autotext list. For example, "Stan-

dard" and "My AutoText" are two section names that appear as categories below:



Solvents

In E-Notebook, you may populate the solvents in the reaction section from the solvents folder in the User Configuration folder. These solvents are named shortcuts for the commonly used solvents.

To add a solvent into the Solvents Table:

1. Right-click a cell in the Solvents Table of the reaction section. A menu appears.
2. Select **Add Solvent After** to add a solvent after the selected item, or **Add Solvent Before** to add a solvent before the selected item. A dialog box appears.
3. Select a solvent from the list. This list displays all of the solvents in your User Configuration folder. Click the **Add** button to close the dialog.
    - The formula you entered appears in the solvents table.

If a solvent that you wish to add is not listed in the Solvents Folder in your User Configuration Folder, then you can manually add it in the table cell:

1. Right-click a cell in the Solvents Table of the reaction section. A menu appears.
2. Select **Add Solvent After** to add a solvent after the selected item, or **Add Solvent Before** to add a solvent before the selected item. The Add Solvent dialog appears.
3. Select the box **Add Blank Solvent** at the bottom of the dialog box.
4. Click the **Add** button to close the dialog. A blank row is added to the solvents table in the reaction section where you can enter the solvent of your choice manually.
5. Repeat the process for other cells in the table, as necessary.

Reactants

Reactants are named shortcuts for a commonly used compounds. These could be either common reagents, or named compounds that you use frequently.

Adding a New Reactant to an Existing Collection

To add a new reactant section to an existing collection.

1. Browse to the existing Reactants collection to which you want to add the new Reactant in the Collection Tree. The Reactants collection appears, with the existing reactants displayed in the right frame.
2. Click the New Acronym button in the right frame. A new acronym section appears.
3. To rename the section, right-click its section tab and select **Rename Section** from the menu that appears. Type a name in the text box that appears.
4. Draw or import the structure using the ChemDraw tools. The formula and molecular weight properties are updated automatically.

5. Enter text for the compound name. This text will be displayed in the table of contents for the Reactants Folder that contains this reactant. (Click the Reactants Folder in the Collection Tree to view its table of contents).

Adding a new Reactant Collection

You can add a new Reactant Collection to your User Configuration folder.

To add a new Reactant Collection:

1. Right-click your User Configuration collection in the Collection Tree and select **New>Reactants Folder**. A new Reactants Folder appears in the Collection Tree and you are prompted to rename it.
2. Enter a name for the folder.
3. Right-click the Reactants Folder and select **New>Reactants**. A Reactants collection appears, and you are prompted to rename it.
4. Enter a name for the Reactants collection.
5. Click the **New Acronym** button in the right frame. A new Reactant section appears.

You may populate reaction sections with the properties of reactants. See Working with Reactions for more information.

Performing the Next Step Function for a Reaction

After you add a chemical reaction to the reaction field of a reaction section, you can use the Next Step function to compute a new collection containing the products of the chemical reaction.

To perform the Next Step function:

- In the reaction section, click the Next Step tool.
- A new experiment/page with a reaction section is created. The chemical structure field displays the products of the first reaction.

6

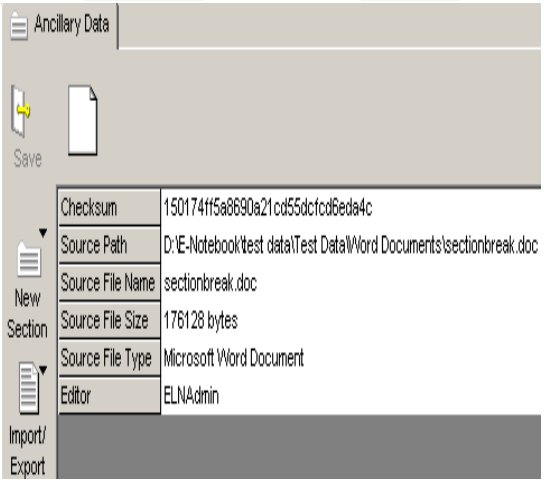
Spectra and Other Sections

This chapter continues the description of sections begun in the previous chapter. For a list of the preconfigured sections covered in this chapter, see “Pre-configured Sections” on page 31.

Ancillary Data Sections

You can use an Ancillary Data section to import a file, such as a PDF or MS PowerPoint file, with an E-Notebook page or experiment. When you import the file, the checksum, source path, and source file name are populated automatically.

Although you cannot view the file from within E-Notebook, you can export it to a location you select. You can then open, view and edit it from there.



To create a new Ancillary Data section:

1. In the Collection Tree, click the Page or Experiment to which you would like to add the Ancillary Data Section.
2. Click the **New Section** button in the right frame. A list of the section types that can be added appears.
3. Select **Ancillary Data**. A new Ancillary Data section appears in the right frame.
4. Click the import tool to import a file. A menu appears.
5. Select **Import...**. A dialog box appears, and you are prompted to select the file.

6. Select the file and click the **Open** button. The type of file and its size are displayed in E-Notebook.

To edit a stored document file, first export it to another location, as follows:

1. Click the Import/Export tool. A menu appears.
2. Select **Export Ancillary data.** A dialog appears prompting you to select a location for the exported file.
3. Enter a location and a file name, and click the **Save** button.
4. Open the file you created in the appropriate location.
5. Edit the file just as you normally would as desired and save it.
6. From the section in E-Notebook, click the Import/Export tool. A menu appears.
7. Select **Import** Ancillary data. A dialog appears and you are prompted to select the file to import.
8. Select the file and click the **Open** button. The edited document with your changes is stored in E-Notebook.

To clear a stored document file from a section in E-Notebook:

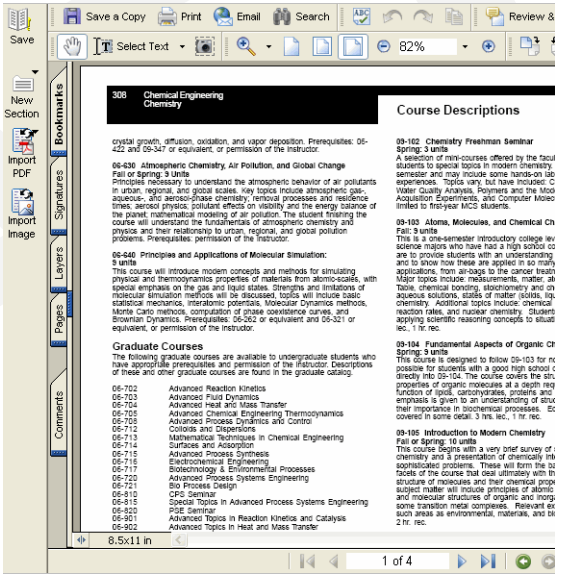
1. Click the section tools icon. A menu appears.
2. Select **Clear Stored Doc**. You are prompted to confirm whether you wish to clear the document file.
3. Click **OK**. The file is cleared.

Captured Image Sections

Captured Image Sections let you view and annotate PDF images and documents, using the same tools as Adobe Reader software. With Captured Image Sections, you can import, export, view, or annotate PDF documents. The section supports a wide variety of image file types, such as JPG, GIF, PNG, TIFF and BMP.

To create a new Captured Image Section:

1. In the Collection Tree, click the page or experiment to which you would like to add the section.
2. Click the New Section button. A list of the section types that can be added appears.
3. Select **Captured Image**. The new section appears within the page.



With this field, you may import a PDF document or a standard image file in PDF format.

Managing Spectral data

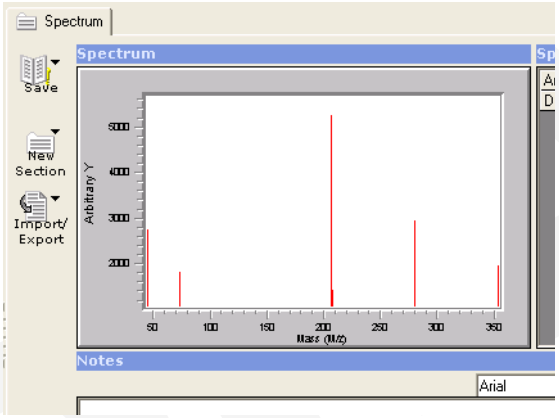
You can manage your spectral data easily and effectively using Spectrum and Spectra sections.

There are two types of sections for spectra. Each type can contain properties, and notes for each spectrum.

- **Spectrum Section** – this section can contain a single spectrum.
- **Spectra Section** – this section can contain multiple spectra, organized in subsections.

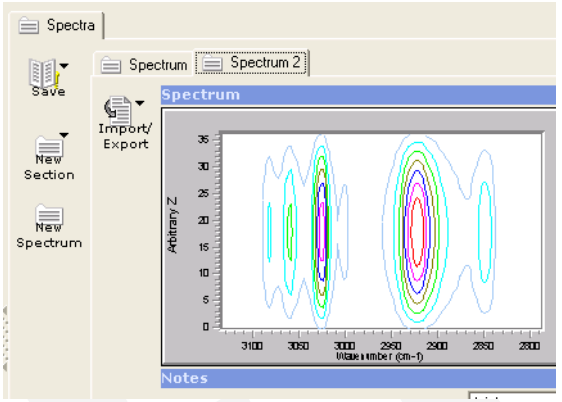
To create a new Spectrum section:

1. In the Collection tree, click the page or experiment to which you wish to add the Spectrum section.
2. Click the New Section button. A menu appears, listing the types of sections that you may add.
3. Select **Spectrum**. The new section appears in the page.



To create a new Spectra section for multiple spectra:

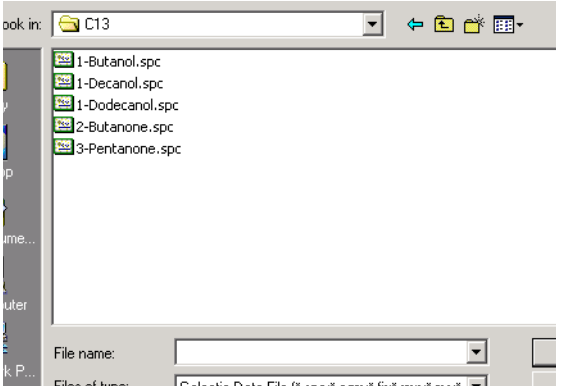
1. In the Collection Tree, click the page or experiment to which you wish to add the Spectra section.
2. Click the **New Section** button. A list of the section types that can be added appears.
3. Select **Spectra**. The new section appears within the page. You may add as many spectrum subsections as you wish by clicking the New Spectrum button.



Adding a Spectrum

To add a spectrum:

1. From within a section with a spectrum field, click the import/export button. A menu appears.
2. Select **Import Spectrum**. The Import Spectrum dialog box appears and you are prompted to select a spectrum image file.



3. Select a spectrum and click the **Open** button. The Import Spectrum dialog box closes and spectrum image appears in the section.

Replacing a Spectrum

If you would like another spectrum image to take the place of an image within a spectra or spectrum section, you can replace the image. To do this, you may import a new image, as described above. The new image will replace the old one or, you may copy an image from another section.

To replace a spectrum image:

1. From within the section containing the image you wish to copy, click the import/export button. A menu is displayed.
2. Select **Copy Spectrum**.
3. Browse to the section containing the spectrum image you wish to replace.
4. Click the import/export button.
5. Select **Paste Spectrum**. The new spectrum image replaces the image in the section.

Zooming in on a Spectrum Peak

To zoom in on a spectrum peak:

1. Click the spectrum image and drag your mouse to draw a box around the area you wish to zoom.
2. Click within the box. The zoomed view appears.
3. To zoom out again, simply right-click in the spectrum image.

Other Fields in a Spectra Data

After you add a spectrum, you can include information about it.

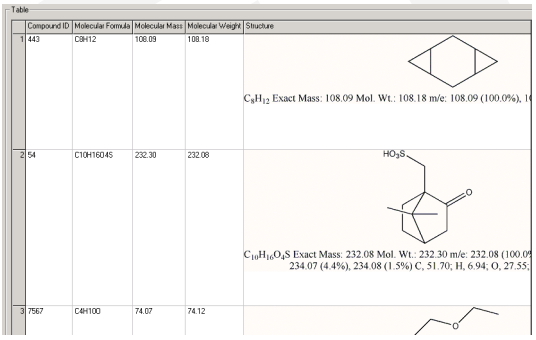
- **Spectrum Properties** – use this list to store Analyst, Type, and Date.

Notes – Record any notes that pertain to a Spectrum in the text field.

See “Adding Properties” on page 60 for more information.

Table Sections

You can use Table sections to organize the chemical properties of compounds that interest you. You can add properties to a Table, pivot a Table, resize columns and rows, and organize columns and rows. You can also insert links to other E-Notebook sections or collections into a table.



See the following topics for more information:

- Adding Columns or Rows
- Removing Columns or Rows
- Rearranging Columns and Rows
- Resizing Columns and Rows
- Pivoting a Table
- Adding Information to a Cell
- Working with Structures and Images
- Changing Information in a Table Cell
- Creating a Reference in a Cell
- See the following topics for more information:
- Adding Columns or Rows
- Removing Columns or Rows

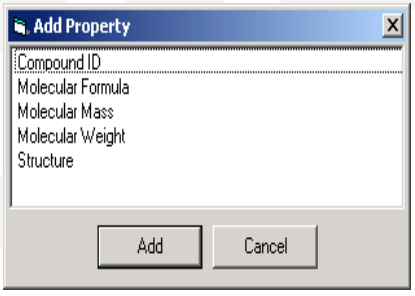
- Rearranging Columns and Rows
- Resizing Columns and Rows
- Pivoting a Table
- Working with Structures and Images
- Adding Information to a Cell
- Changing Information in a Table Cell
- Creating a Reference in a Cell

Adding Columns or Rows

You can add columns and rows to a table. By default, a column displays a list of value for a particular property.

To add a column:

1. Browse to the section that contains the table.
2. Right-click the table where you would like to add the column.A menu appears.
3. Select **Add Property Before**, to add a property before the current property, or **Add Property After**, to add a property after the current property. A dialog box appears with a list of the properties you may add.



4. Highlight the property you want to add to the table and click the Add button.The property appears as a column in the table, immediately in front of the location you selected.

To add a row:

1. Right-click the table where you would like to add the row. A menu appears.
2. Select **Add Row Before**, to add a row before the current row, or **Add Row After**, to add a row after the current row.

NOTE: If the Table has been pivoted, select **Add Property** *to add a row, and* **Add Row** *to add a column. (Pivoting transposes the rows and columns in the table).*

Removing Columns or Rows

You can remove columns and rows from a table.

To remove a column:

1. Right-click the column you want to remove. A menu appears.
2. Select **Remove Property**. A dialog box appears, asking you if you are sure you want to delete the property from the table.
3. Click the **Yes** button. The column is removed from the table.

NOTE: If the table has been pivoted, right-click a row to remove a property.

To remove a row:

1. Right-click the row you wish to remove from the table. A menu appears.
2. Select **Remove Row**. A dialog box appears, asking you if you are sure you want to delete the row from the Table.
3. Click the **Yes** button. The row is removed from the Table.

Rearranging Columns and Rows

You can easily move rows and columns to display the information in whatever order you want. You can move columns left or right, move rows up or down, and sort data in the table in ascending or descending order.

To move a column left or right:

1. In the table, right-click the column to move. A menu appears.
2. Select **Move Property Left** or **Move Property Right**. The column is moved either one place to the left or one place to the right, depending upon your selection.

To move a row up or down:

1. In the table, right-click the row to move. A menu appears.
2. Select **Move Row Up** or **Move Row Down**. The column moves either left or right, depending on your selection.

Sort Data by a Property

To sort the data by a property:

1. Right-click the row or column corresponding to the property by which you wish to sort the table. A menu appears.
2. Select either **Sort Ascending** or **Sort Descending**.

Resizing Columns and Rows

You can easily resize rows and columns, so that the information is displayed more effectively to the size you want.

To resize a row or column:

1. Move the cursor to the border of the row or column. A double-headed arrow appears.
2. Click-drag the border in the direction you desire so that the column or row is the desired size.

To autofit a column or row to the size of its contents, double-click it.

Pivoting a Table

When you pivot a table, its columns become rows and its rows become columns.

To pivot a table:

1. Right-click the table. A menu appears.
2. Select **Pivot Table**. The rows and columns of the table are transposed.

Adding Information to a Cell

There are a number of ways to add information to a table cell. Information may be text, numbers, dates, or structures. Your system configuration determines what type of data it is possible you can add to cell.

There are three ways to add information to a cell:

- Choose a value from the drop-down menu that appears in the cell. You will use this option when the cell has a list of possible values associated with it.
- Enter a value using the keyboard.
- Draw a chemical structure — See “Working with Structures and Images” on page 53 for more information.

In some cases, your system administrator may have configured E-Notebook such that a particular property in the table has one or several of the following attributes:

- **Read-Only** – certain properties in the table may be for display only, and the value cannot be changed.
- **Required** – the property cannot be deleted.
- **Not Blank** – it may be necessary to enter a value for a particular property before you can perform a transition on the collection.

For example, an experiment collection may be set up such that it is necessary to enter an equipment id before you can close the experiment. If this is the case, you will be prompted to add the values to the table when you attempt to perform the transition. see “Performing a Collection Transition” on page 27 for more information about transitions.

- **Validated** – The value is checked for validity against an external database. Invalid values aren’t accepted.
- **Enumerated from a database** – values displayed in a drop-down list for any particular cell and pulled from an external database.

Certain numerical properties in a table may have units associated with them. See “Numerical Units in Tables and Property Lists” on page 201 for more information.

Working with Structures and Images

Tables may contain chemical structure fields, which you can use to manage data about the structures that interest you. You can also add standard image files to the chemical structure fields.

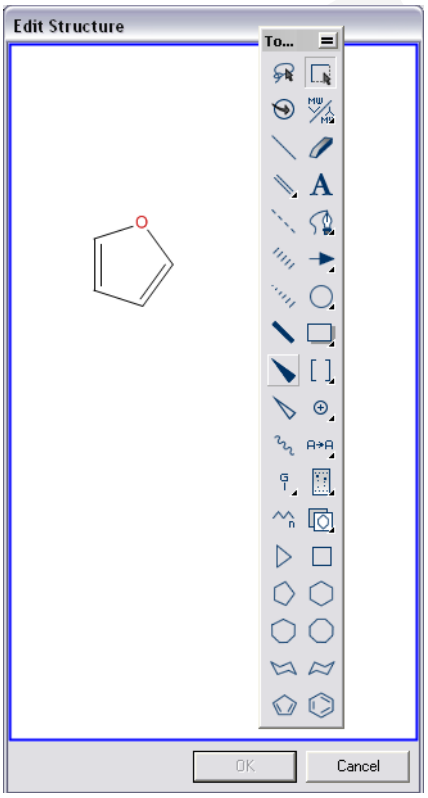
To add a structure or image to a table:

1. Double-click a table cell corresponding to a structure or image. The **Edit Structure** dialog box appears.
2. Use the ChemDraw tools to draw the structure or copy a standard image file into the field and click the **OK** button.
   To copy an image, right-click the field and select **Edit**, then **Paste**. The structure or image appears in the table.

Editing a Structure or Image

To edit a structure or image:

1. Double-click the table cell containing the structure or image. The **Edit Structure** dialog box appears.
2. Use the ChemDraw tools to edit the structure, or you may copy an image file into the field. The modified structure or image appears in the table.



Deleting a Structure or Image

To delete a structure or image:

1. Double-click the structure or image you wish to delete. The **Edit Structure** dialog box appears.
2. Using the ChemDraw tools, select the entire structure or image and delete it.
3. Click the **OK** button. The dialog box closes and the structure or image is deleted from the table.

Changing Information in a Table Cell

The data type of a cell determines what type of information you add to the cell. For example, you can only draw a chemical structure in a cell with a data type of structure.

Depending on the data type, you can edit the information in a cell one of the following ways:

- Choose another value from the menu that appears in the cell – use this option when the cell has enumerated values associated with it.
- Enter a value with the keyboard.
- Edit a Chemical Structure or change and image – See "Working with Structures and Images" on page 53 for more information.

Certain numerical properties in a table may have units associated with them. See "Numerical Units in Tables and Property Lists" on page 201 for more information.

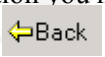
Creating a Reference in a Cell

Within a table cell, you can add a link to another collection/section in E-Notebook or a link to an external URL. This makes it easy to browse back and forth between related data.

Linking a Cell to a Collection

To add a link from a table cell to a collection:

1. In the Collection Tree, click the collection containing the table, then select the section containing the table.
2. Click the table cell to which you wish to add the link.
3. In the Collection Tree, click the collection you would want to reference and, while holding the mouse button down, drag the collection into the upper-left corner of the table cell, until the cursor displays a small arrow, as shown.
4. Release the mouse. The reference is created, and a small arrow appears in the upper-left corner of the table cell.

You can click the arrow in the table cell to navigate to the collection you have referenced. Click the Back arrow 

to return to the table.

Alternatively, you may right-click the collection you wish to reference and select **Copy**. Then, right-click within the table cell to which you are adding the reference, and select **Paste Reference**.

Linking a Cell to a Section

To add a link from a table cell to a section:

1. In the Collection Tree, click the collection containing section that you would like to reference, then select the section. The section to which you would like to make a reference appears.
2. Right-click the Section menu icon,  and select **Copy Section**.
3. In the Collection Tree, click the collection containing the table to which you are adding the reference, and then click the section that contains the table.
4. Right-click within a table cell and select **Paste Reference** from the menu that appears. The reference is added to the table cell, and a small arrow appears in the upper-left corner of the cell. Clicking the arrow will display the section you have referenced.

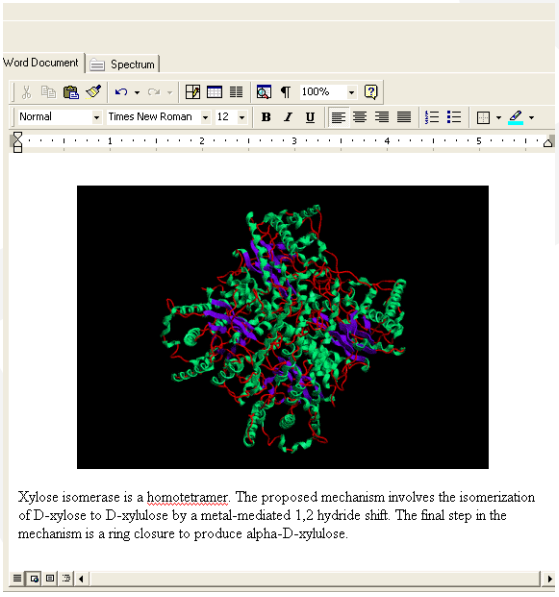
Linking to an External URL

To add a link from a table cell to an external URL:

1. Right-click in the table cell to which you wish to add the reference. A menu appears.
2. Select **Edit Reference**. The Edit Reference dialog appears.
3. Enter the URL and click **OK**. The reference is added to the table cell, and a small arrow appears in the upper-left corner of the cell. Clicking the arrow will display the URL you have referenced.

MS Word Sections

Use MS Word Sections to manage information that you normally record in MS Word.



To create a new, MS Word Section:

1. In the Collection Tree, click the page or experiment to which you would like to add the Section.
2. Click the New Section button icon in the right frame. A list of the section types that can be added appears.
3. Select **MS Word Document**. A new Word document appears in the right frame.
4. Click in the Word field to begin editing.

Importing a MS Word Document

To import an existing Word document:

1. Click the import icon that appears in the right frame. A menu appears.
2. Select **Insert MS Word Document**. A file system dialog box appears.
3. Browse to the file and click **Open**. The file appears in the MS Word field.

Editing Inside Word

To edit the document within Word:

1. Right-click the import icon that appears in the right frame. A menu appears.
2. Select **Export MS Word Document**. A dialog box appears, and you are prompted to enter a file name and a destination folder for the file.
3. Enter a destination for the file and a file name, and click the **Save** button.
4. Open in Word the file you created.
5. Edit and save the file in word.
6. Click the Import/Export icon. A menu appears.
7. Select **Insert MS Word Document**.
8. Select the file you edited. The document with your changes appears in E-Notebook.

Displaying Word Toolbars

The toolbars displayed with an MS Word field in E-Notebook are the toolbars that appear when you open Word. If you would like additional toolbars to appear with your Word

fields, close E-Notebook and open Word. Then, change your settings for display or hiding toolbars in Word. When you restart E-Notebook, it will use the Word settings.

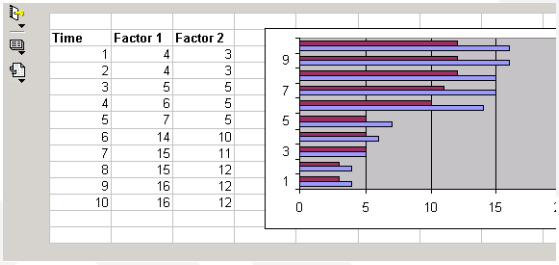
If you would like access to additional toolbars within an MS Word field when you are editing, right-click the toolbar at the top of the field to select other toolbars to display. The toolbars you add will persist until you navigate away from the section.

Checking Spelling

Check your spelling on an MS Word field, click in the field to select it, then press F7 on your keyboard.

MS Excel Sections

Use MS Excel Sections to manage Excel spreadsheets in E-Notebook.



To create a new, MS Excel Section:

1. In the Collection Tree, click the page or experiment to which you would like to add the section.
2. Click the New Section button. A list of the section types that can be added appears.
3. Select **MS Excel Spreadsheet**. A new MS Excel Spreadsheet appears in the right frame.
4. Edit the spreadsheet just as you would normally edit a spreadsheet in MS Excel.

To import an MS Excel document:

1. Click the import tool icon for the MS Excel field. A menu appears.
2. Select **Import MS Excel Spreadsheet**. A dialog box appears, and you are prompted to select the file.
3. Browse to the file, and click **Open**. The spreadsheet appears in E-Notebook. The section of the spreadsheet that was most recently active is displayed.

To export the file:

1. Click the import tool icon. A menu appears.
2. Select **Export MS Excel Spreadsheet**.
3. Enter a destination for the file and a file name, and click **Save**.

To clear an Excel file from a section:

1. Click the import tool icon. A menu appears.
2. Select **Clear MS Excel Spreadsheet**. You are prompted to confirm whether you wish to clear the document file.
3. Click **OK**.

7

Working with Data in E-Notebook

E-Notebook enables you to work with many, diverse types of data, and then keep related data together in collections such as experiments and pages.

See the following topics for information about working with various types of data:

- Chemical Structure Data
- Database Tables
- Styled Text
- Subsections
- Property Lists

NOTE: Your system configuration determines what types of data you can add to sections. To model your workflow and ensure that E-Notebook accommodates the data types you frequently use, your system configuration may include modified versions of these data types. Also, certain data types may not appear in your configuration, and additional, custom data types may have been added.

Chemical Structure Data

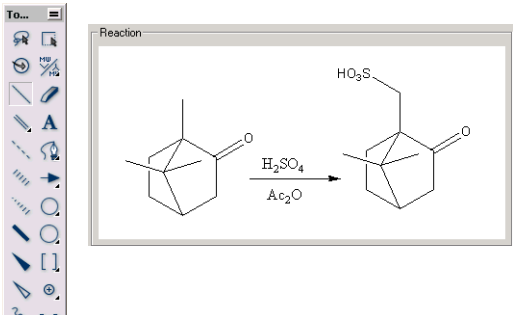
The *ChemDraw* Toolbar lets you to create a chemical structure by connecting frequently used substructures together. For more information about using the *ChemDraw* Toolbar, see the *ChemDraw* User's Guide.

You can also paste standard image files into chemical structure fields (see "Inserting an Image" on page 58), and then use the *ChemDraw* toolbar to add annotation, such as text and arrows and searchable text. Text in the chemical structure fields is searchable.

Drawing a Structure

To draw a chemical structure:

1. Click within a chemical structure field. The ChemDraw toolbar appears.



2. Using the *ChemDraw* tools, draw a structure or reaction.

TIP: You can access a drawing menu by right-clicking in the structure window. This menu allows you to, among other things, copy and paste structures.

Expanding the Drawing Window

To expand the drawing window:

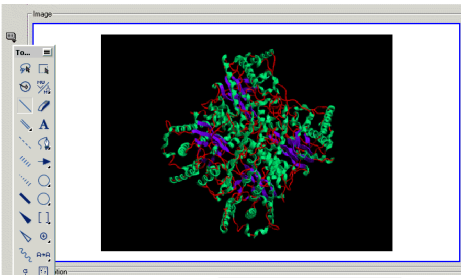
1. Double-click the frame of the chemical structure field. The chemical structure field expands.
2. Using the *ChemDraw* tools, draw the structure or reaction.
3. When you are finished editing, double-click the frame of the chemical structure field to return it to its original size in the form.

You can also use chemical structure fields to display and annotate standard image files.

Inserting an Image

To insert an image into a chemical structure field:

1. Copy the image onto the clipboard. You may do this by, for example, selecting the **Select All** and **Copy** commands when the image file is open in a Microsoft Photo Editor.
2. Right-click within the structure field in E-Notebook. A menu appears.
3. Select **Edit>Paste**. The image appears in the chemical structure field.



4. Use F7 to zoom in, and F8 to zoom out. You can access the drawing menu by right-clicking in the structure window. This menu allows you to, among other things, annotate the image.

Annotating the Image

To annotate the image:

1. Click the "A" in the ChemDraw toolbar.

2. Click in the chemical structure field, and type the text you would want to enter. The text appears in the field.
3. To add an arrow to the image, click the arrow tool.

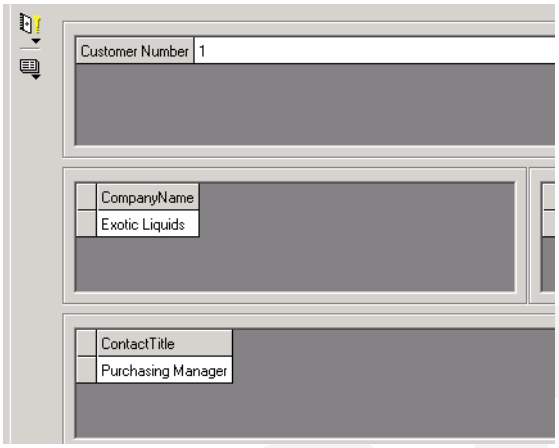
Database Tables

You can use Database Tables are used to import data from an external database and display it in E-Notebook. The data is for display only and cannot be edited.

In some configurations, database tables may be filled in based on a value that you enter elsewhere in a form. In the example below, a value may appear into the Customer Number property list field. Based on that value, the following Database Tables are filled in: Contact Name, Company Name, Company Address, and Contact Title. You can edit only the Cus-

tomer Number field (which is not a Database Table field); the other fields are for display, and will change only if another, you enter another valid Customer Number.

(In this example, the data was pulled in from the Northwind database, which is one of the default databases in MS SQL Server).

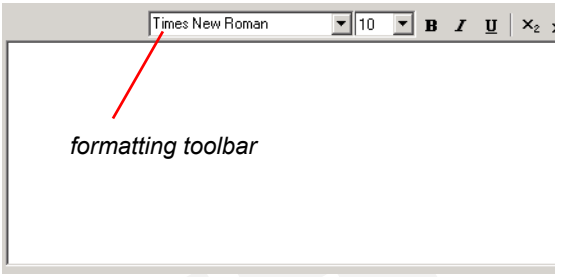


Styled Text

You can use styled text boxes to record notes, preparation information, etc. A styled text box is often included in a form with other types of data, making it possible to combine text notes with related data. Certain styled text fields in your configuration may have AutoText associated with them. You can use the AutoText feature to populate the styled text field automatically. See “Autotext” on page 39 for more information.

To format the text:

- Click the styled text box in the section. A cursor appears in the box, and you can begin typing. Immediately above the box, there may be a toolbar for formatting the text.



You can also type the text, highlight it, and then select the text options you wish to apply to it. You can also use standard editing keys such as Control-C (for copy) and Control-V (for paste)

Note that in your system configuration, the styled text box may not include the formatting toolbar. In addition, a styled text box may be read-only, meaning that you can view but not edit its contents.

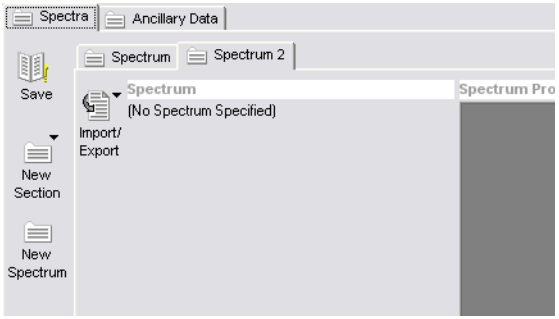
A styled text box may also be required. You may need to enter text into the box before you can perform a transition on a particular collection. For example, you may need to enter text into a text field before you can close a Page or Experiment.

Subsections

Certain sections may be set up to contain other sections, known as subsections. The subsections appear as tabs within a section. For example, in a Spectra section each spectrum is in a separate subsection.

To add a subsection to a Spectra section.

1. Click the New Spectrum icon in the right pane. The subsection appears within the section.



2. Right-click the subsection icon and click **Rename Section** to change the name.

You can manage a subsection just as you would a section.

Property Lists

Property Lists are used in forms to record various types of data properties such as temperature or pressure.

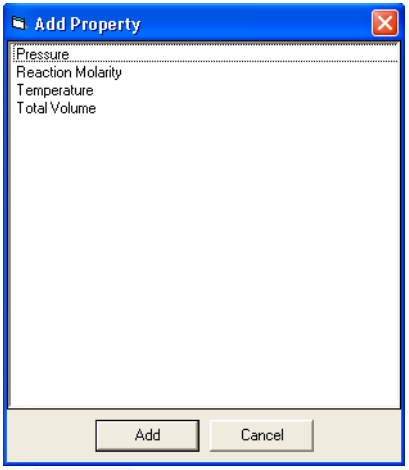
Property lists lets you to add references to them. When you add reference to a property, you can navigate to the collection or section you have referenced, simply by clicking a link in the property cell.

For a list of the allowed data types, see Table 13.1 on page 169.

Adding Properties

To add a property to a property list:

1. Right-click within the property list in a section. A menu appears.
2. Select **Add Property...**. The **Add Property** dialog box appears, listing the properties you may add.



3. Click the property you wish to add. Use CTRL+click to select multiple properties, or SHIFT+click to select a range.
4. Click **Add**. The property or properties appear in the list.

You system configuration determines which properties you may add to the list, and which properties appear by default.

Removing Properties

To remove a property from a property list:

1. Right-click the property you wish to remove from the Property List. A menu appears.
2. Select **Remove Property**. A message appears, asking you if you are sure you want to remove the property.
3. Click **Yes**. The property is removed from the Property List.

Setting and Editing Values

You can set and edit values for the properties in a property list, such as the list shown below.

To set or edit the value of a property:

1. Click a cell in the property list. The values you can enter will depend upon the data type of the specific property.
2. Enter an appropriate value.
3. Click elsewhere in the section. The value is displayed in the cell.

Depending upon your system configuration, certain properties may have one or several of the following attributes:

- **Read-Only** – certain properties may be for display only, and it may not be possible to edit them.
- **Required** – it may not be possible to delete a particular property from a property list. If a property is required, you will be presented with an error message when you attempt to delete it.
- **Not Blank** – it may be necessary to enter a value for a particular property before you can perform a transition on the collection. For example, an experiment collection may be set up such that it is necessary to enter an equipment id before you can close the experiment. If this is the case, you will be prompted to add the values to the table when you attempt to perform the transition. see “Performing a Collection Transition” on page 27 for more information about transitions.
- **Validated** – Values you enter into a property list may be checked against an external database, to ensure that they are valid values. In this case, if you enter an invalid value, you will receive an error message, and E-Notebook will not accept the value.
- **Enumerated from a database** – values displayed in a drop-down list for any particular property may be pulled from an external database.

When searching with the Property Query Field, numeric values for properties are interpreted by evaluating the longest possible set of characters that are converted into a number, starting with the first character. For example, a search for “37.5” will find “37.5g”. A search for “2” will find “2 ATM/50”. Also, conversion is performed to find equivalent values. For example, when searching over a volume property for which mL are the default units, a search for “50 mL” (without quotes) will return both “0.05 L” and “50 mL”.

Creating a Reference

Within a property list, you can add a link to another collection/section in E-Notebook or a link to an external URL. This makes it easy to browse back and forth between related data.

Linking to a Collection

To add a link from a property list cell to a collection in E-Notebook:

1. In the Collection Tree, click the collection containing the property list, then select the section containing the property list. The section containing the property list appears.
2. Click the cell of the property list to which you wish to add the reference.
3. In the Collection Tree, click the collection you would like to reference and, holding the mouse button down, drag the collection into the upper-left corner of the property list

cell, until the cursor displays a small arrow, as shown.

4. Release the mouse. The reference is created, and a small arrow appears in the upper-left corner of the property list cell.

TIP: You can click the arrow in the property list cell to navigate to the collection you have referenced, and click the Back arrow Back *to return to the property list.*

Alternatively, you may right-click the collection you wish to reference and select **Copy**. Then, right-click within the property list to which you are adding the reference, and select **Paste Reference**.

Linking to a Section

To add a link from a property list cell to a section in E-Notebook:

1. In the Collection Tree, click the collection containing section that you would like to reference, and then select the section. The section to which you would like to make a reference appears.
2. Right-click the Section menu icon, and select **Copy Section**.
3. In the Collection Tree, click the collection containing the property list to which you are adding the reference, and then click the section that contains the property list.
4. Right-click within a property list cell and select **Paste Reference** from the menu that appears. The reference is added to the property list cell, and a small arrow appears in the upper-left corner of the cell. Clicking the arrow will display the section you have referenced.

Linking to an External URL

To add a link from a Property List cell to an external URL or an intranet URL:

1. Right-click within the property list cell to which you wish to add the reference. A menu appears.
2. Select **Edit Reference**. The Edit Reference dialog appears.
3. Enter the URL and click **OK**. The reference is added to the property list cell, and a small arrow appears in the upper-left corner of the cell. Clicking the arrow will display the URL you have referenced.

Rendering

Rendering in computer science is to convert (graphics) from a file into a visual form., as on a video display. Here, we are using it to describe the export of the contents of a collection to a PDF or MS Word file, or to a printer.

E-Notebook provides several options for rendering the contents of your experiments and other types of collections. It also offers the E-Signatures feature for electronically signing your experiments.

Exporting

You can export sections to MS Word, or Collections containing the sections to PDF or Word, then manage them as you would PDF or Word documents. Rendering to PDF expands the standard page to the size of the contents of the section.

To export a section:

1. In the Collection Tree, click the collection containing the section(s) you wish to export

to Word. The sections appear in the right frame.

2. Right-click the section menu icon. The section menu appears.
3. Select **Export to MS Word**. You are prompted to choose a destination folder and file name.
4. Choose a folder and file name and click **Save**. You are prompted to choose an export range.
5. Select an export range. The options are:
   - **All Sections** – to export all of the Sections.
   - **Sections from** X **to** Y – to export a range of sections, where X and Y are values you specify.
   - **Current Section** – to export only the current Section.
6. Click the checkbox **Open Document After Export** if you would like the PDF document to be opened immediately after the export is complete.
7. Click the **Export** button.

To export a collection:

1. In the Collection Tree, right-click the item you wish to export. A menu appears.
2. Select **Export to MS Word** or **Export to PDF**. You are prompted to choose a destination folder and file name.
3. Continue with step 5 in Exporting a Section, above.

If you chose to open the document after export, the document is opened, and it displays the Sections you selected for export. If you chose not to open the document, the document is saved in the folder you specified.

Printing

You can print Sections or Collections.

To print a collection:

1. In the Collection Tree, right-click the collection. The collection menu appears.
2. Select **Print**.
3. Select the printer options.
4. Select the page range:
   - **All** – prints all of the sections.
   - **Selection** – prints only the selected section.
   - **Pages** – allows you to specify a range of sections to print. For example "1-5" would print the first, five sections in the collection.
5. Make your selections and click **Print**. The collection or the portion of it you selected is printed.

To print a section:

1. In the right frame, select the section you wish to print.
2. Click the section menu icon.  The section menu appears.
3. Continue with step 2 of printing collections, above.

NOTE: Your system configuration contains templates that determine exactly how the printed page appears.

If **Visual Display of Changes** is enabled, the print will include the following:

- The data, as-is, exists in the current version.
- The version history, including the date and the author for each version after the baseline version. (The baseline version is the

version that existed when visual display of changes began).

- A list of changes grouped by field.

In some configurations, there is a Final Print transition that automatically creates a complete printout of the collection.

8

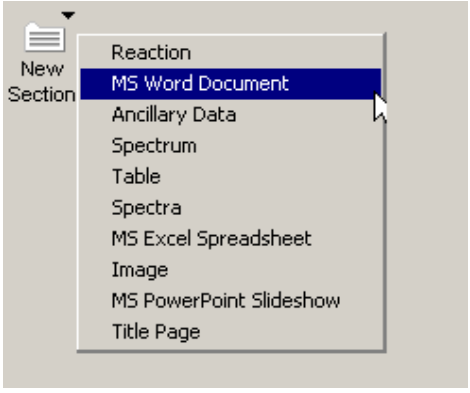
Managing and Organizing Sections

Creating a Section

You can create a new section within a collection.

To create a section:

1. In the Collection Tree, click the collection to which you wish to add the section. If the collection already contains sections, they appear in the right frame.
2. Click the New Section icon in the right frame. A menu appears, listing the types of sections that you may add.



3. Select the type of section you wish to create. A new section of that type appears.

Your system configuration determines which types of sections can be added to which types of collections. These rules are very flexible, and they make it possible to tailor the E-Notebook application to your workflow.

Modifying a Section

To modify a section within a collection:

1. Go to the section you wish to modify.
2. Edit the data in the section.

Only E-Notebook user can edit sections in a individual collection at any given time. If another user is editing a collection and you attempt to edit it, a message will inform you that the collection is locked for editing by the other user.

In some cases, you will only have Read permission for a collection, meaning that you may view the collection but not edit it.

See “Changes and Audit Trail” on page 101 for more information about saving your changes.

Removing a Section

To remove a section from a collection:

1. Go to the section you wish to remove.
2. With the section displayed, right-click the section menu icon.  The section menu appears.
3. Select **Delete Section**.A message appears, prompting you to confirm that you wish to remove the section.

4. Click the **Yes** button. The Section is deleted.

Note that your system configuration may prevent you from deleting certain sections. For example, if you are working with a collection that has Visual Display of Changes enabled, it will not be possible for you to delete a section.

Also, in some cases, it may be possible to delete the sections only if no data has been added to them.

Moving a Section within a Collection

You can move a section within a collection. This allows you to organize sections in the most effective way.

To move a section:

1. Go to the section you wish to move.
2. Right-click the section menu icon.  A menu appears.
3. Select **Move Up** to move the section to the left a single position, or select **Move Down** to move the section to the right a single position.The section is moved in the way you selected.
4. Repeat the process until the section is in the desired location.

Cutting and Pasting a Section

To cut a section and paste it into another collection:

1. Go to the section you wish to cut.
2. Right-click the section menu icon. 

   The section menu appears.
3. Select **Cut Section**.
4. In the Collection Tree, click the collection in which you would like the copied section to appear.
5. Right-click the section menu icon.  The section menu appears.
6. Select **Paste Section**. The section appears in the right frame.

NOTE: Your system configuration determines where you may paste sections of various types.

Renaming a Section

To rename a section:

1. Go to the section you wish to rename.
2. Right-click the section menu icon.  The section menu appears.
3. Select **Rename Section**. A dialog box appears, and you are prompted to type in a new name for the section.
4. Type in a new name and click the **Rename** button. The dialog box closes and the new name of the section appears.

NOTE: Your system configuration may prevent you from renaming certain sections.

Duplicating a Section

When you duplicate a section, the copy can be in the same collection as the original or in a different collection.

To duplicate a section in the same collection:

1. Go to the section you wish to duplicate.

2. Right-click the section menu icon. The section menu appears.
3. Select **Duplicate Section**. A copy of the section appears.

In some cases, your system configuration may prevent you from duplicating a particular section within a collection.

To duplicate a section from one collection to another in a different collection:

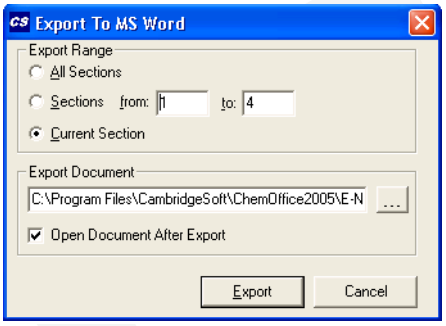
1. Go to the section you wish to duplicate.
2. Right-click the section menu icon. The section menu appears.
3. Select **Copy Section**.
4. In the Collection Tree, click the collection in which you would like the copied section to appear.
5. Right-click the section menu icon. The section menu appears.
6. Select **Paste Section**. A copy of the section appears in the right frame.

NOTE: In some cases, your system configuration may prevent you from copying the section into a collection.

Exporting Sections to MS Word

You can export sections to MS Word, then manage them as you would other MS Word documents. To export sections to MS Word:

1. In the Collection Tree, click the collection containing the section(s) you wish to export to MS Word. The sections appear in the right frame.
2. Right-click the section menu icon. The section menu appears.
3. Select **Export to Word**. You are prompted to choose a destination folder and file name.
4. Choose a folder and file name and click the **Save** button. You are prompted to choose an export range.



5. Select an export range. The options are:
   - **All Sections** – to export all of the sections.
   - **Sections from** X **to** Y – to export a range of sections, where X and Y are values you specify.
   - **Current Section** – to export only the current section. This is the default option.
6. Select the **Open Document After Export** checkbox whether you would like the Word document to be opened immediately after the export is complete.
7. Click the **Export** button.

Printing Sections

To print a section:

1. In the right frame, select the section you wish to print.
2. Right-click the section menu icon. The section menu appears.
3. Select **Print...**.

4. In the print dialog box, select the printer options.
5. Select the **Page Range**:
   - **All** – prints all of the sections in the collection.
   - **Selection** – prints only a selected part of the document (you need to first select the part you want to print).
   - **Pages** – allows you to specify a range of sections to print. For example "1-5" would print the first five sections in the collection.
6. Make your selections and click **Print**. The section(s) you selected are printed.

NOTE: Your system configuration contains templates that determine exactly what is printed when you print from E-Notebook.

If Visual Display of Changes is enabled, the print will include the following:

- The data as it exists in the current version.
- The version history, including the date and the author for each version after to the baseline version. (The baseline version is the version that existed when visual display of changes began).
- A list of changes grouped by field.

9

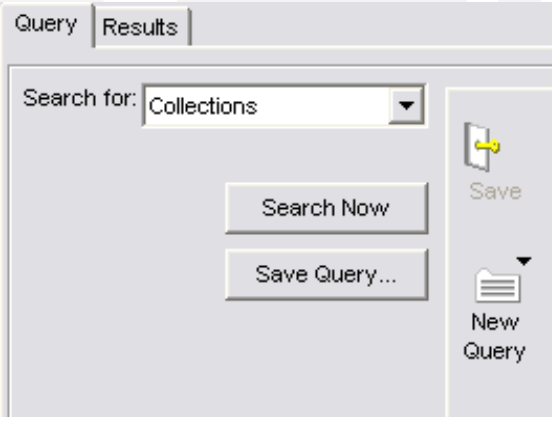
Searching

E-Notebook offers an extensive array of searching features. You can search for:

- Chemical structures
- Strings of text
- Values in property lists and tables
- Collections and sections that meet specific criteria, such as creation date or owner's name
- Unannotated versions of collections.

General instructions for conducting a search:

1. Click the **Search** button. Search mode appears.



2. From the **Search for** drop-down list, select the type of search you would like to conduct. See the following topics for information about the different searches:
   - Collections – returns notebooks, pages, experiments, folders, etc.
   - Sections – returns specific sections, such as reactions, procedures, or MS Excel sections.
   - Chemical Structures
   - Unannotated Collections
3. If no form appears, click the New Query button. A query form appears. If multiple query forms are available, a menu appears and you can make your selection.
4. Specify the parameters that will determine the search results.The parameters you can specify are determined by the type of query you are conducting.
5. Do one of the following:
   - Click **Search Now** to execute the query. A results list appears.
   - Click **Save Query** to save the query. A dialog appears, and you are prompted to select a location for the saved query. Then, you are prompted to give the search a name.

Searching for Collections

The collection search allows you to search for collections, such as notebooks, folder, or experiments. You may conduct a search based for specific content or for metadata, such as owner's name and creation date. You can save

your queries and the results lists in the Collection Tree.

To conduct a search for collections:

While in Search mode, select **Collections** from the **Search for** drop-down list.

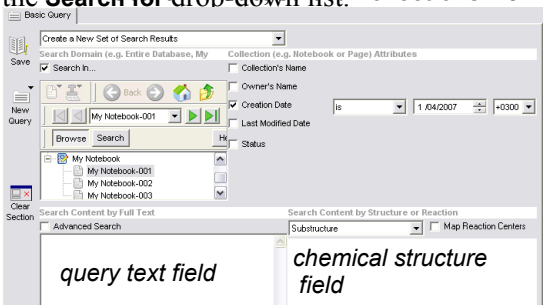


Figure 9.2 Searching for collections

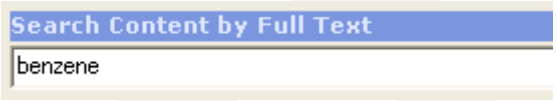
1. If no form appears in the right frame, click the **New Query** icon.  A menu appears.
2. Select **Basic Query** or **Advanced Query**. An empty query form appears.
3. Enter your search criteria, as described below. Do one of the following:
   - Click **Search Now** to execute the query. A results list appears, listing the Collections that match the criteria you specified.
   - Click the **Save Query** button to save the query. A dialog appears, prompting you to choose a location for waving your search. Select a location and click the **Save** button. The Collection Tree appears with a new Collection Search, and you are prompted to name the search.

Your search for collections may include the following search fields:

Query Text Field

Use the Query Text field to search for the following text:

- Text in MS Word fields
- Text in Styled Text fields
- Text in MS Excel spreadsheets
- Text in Chemical Structure fields
- Properties in Property Lists
- Properties in Tables
- Text in several types of stored document files — MS Word, MS Excel, MS PowerPoint.



See “Searching for Text with the Query Text Field” on page 89 for a description of the search capabilities.

Chemical Structure Field

You can search for a structure, substructure, or reaction using the *ChemDraw* Toolbar. (Alternatively, you may open a structure file of a supported file type). See “Chemical Structure Search” on page 71 for information about performing a structure search. The section search differs from the chemical structure search in that the results of a section search are not organized by substructure.

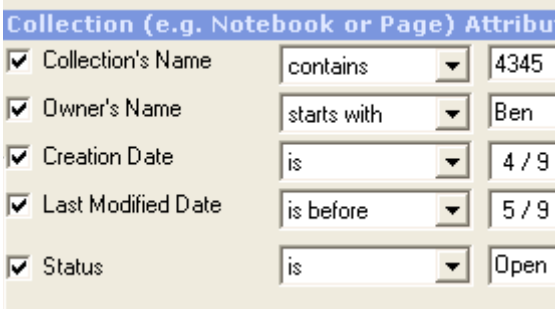
Search Location Field

The Search Location field allows you specify the branch of the collection tree for your search. To select a search location, click the **Search In** checkbox to select it, and browse to or search for the root collection for your search. The search will cover the root you select and any collections within it.

Collection (Metadata) Properties

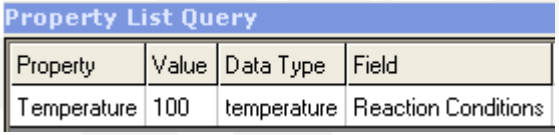
Metadata Properties describe the collections that contain the sections for which you are searching. For Selecting a checkbox makes

visible an area that allows you to enter criteria. See “Searching with Collection Attributes” on page 87 for more instructions on entering these criteria.



Advanced Query

Clicking the Advanced Query option when you select a new query lets you search with Property Query and Table Query Fields. The Property Query Field is used to search over Property Lists, and the Table Query field is used to search over Tables. See “Searching with the Property Query and Table Query Fields” on page 88.



Searching for Sections

You can search for sections that meet the criteria you specify. You can then refine your search, or save your queries and the results lists.

To conduct a search for sections:

1. While in Search mode, select **Sections** from the **Search for** drop-down list.
2. Proceed as in “Searching for Collections” on page 69.

When you conduct a search for sections, *all* of the search criteria you enter into the query form must exist in a section in order for the section to be considered a match. In other words, the search is an AND search. If you add an additional search form, you can conduct an OR search. The search results will contain the sections that match:

- all of the criteria in the first search form and
- all of the criteria in the second search form.

After running a search you may refine it, adding additional criteria. See “Refining a Search” on page 97.

Searches are not case sensitive. A search for “Benzene” will find both “Benzene” and “benzene”.

Your section search form may include the following search fields:

- Query Text Field
- Chemical Structure Field
- Search Location Field
- Collection (Metadata) Properties
- Property Query and Table Query Fields

See “Searching for Collections” on page 69 for details on these fields.

Chemical Structure Search

Substructure searching finds structures that contain the query and any additional attachments at the open positions. Using the ChemDraw toolbar, you can attach different features, such as atom lists and variable bond types, to a query to perform a narrower or broader search.

The Chemical Structure search will find structures in chemical structure fields and tables in E-Notebook. The results of the search are grouped by structure for easy analysis and

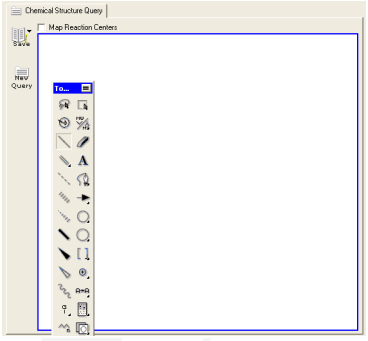
organization. You can save queries and the results lists to the E-Notebook Collection Tree.

Note that you may also search for chemical structures with the Section Search and Collection Search. These searches allow you to combine the structure search with other search criteria. The results of the Section Search and Collection Search, however, will present the search results in a list, rather than ordering them by structure.

To conduct a search for structures:

1. While in Search mode, select **Chemical Structure** from the **Search for** drop-down list.
2. Click the New Query icon. 

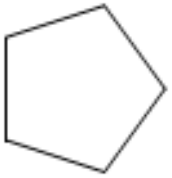
An empty query form appears.



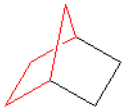
3. Within the chemical structure box, draw the structure or substructure for which you wish to search, or right click within the structure box to import a file. (For more information about the structure drawing capabilities of ChemDraw, please consult the ChemDraw User's Guide).
4. Do one of the following:
   - Click **Search Now** to execute the query. A results list appears.
   - Click the **Save Query** button to save the query. The Collection tree appears with a new Structure Search, and you are prompted to give the Structure Search a name.

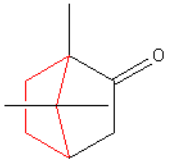
An example of substructure searching of Cyclopentane.

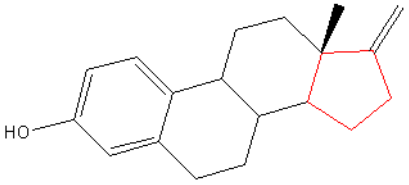
The substructure query:

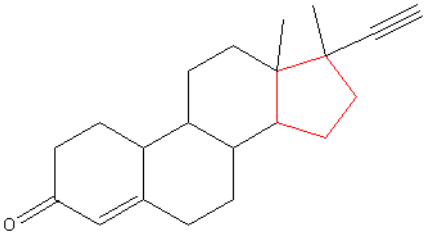


Will hit the following (and other molecules):

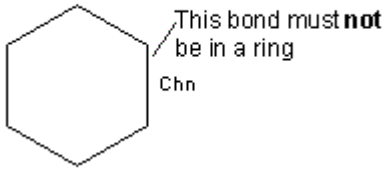








In searching substructures, E-Notebook finds the substructure query regardless of its orientation or drawing presentation in the targeted molecules.E-Notebook does its best to follow your instructions even if those instructions are contradictory. For example, you can create a query such as the following:



That bond is already in a ring, so no hits are returned for this query.

- Bond Properties
- Reaction Properties

Atom Properties

Indicator	Query Property
*	Substituents: Free Sites (followed by the number of free sites)
U	Substituents: Up To (followed by the maximum number of substituents)
X	Substituents: Exactly (followed by the number of substituents)
H	Implicit Hydrogens
R	Ring Bond Count
S	Unsaturation

Indicator	Query Property
C	Reaction Change
T	Reaction Stereo
L	Translation
I	Isotopic Abundance
(none)	Abnormal Valence

See Also: Bond Properties

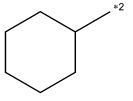
Unspecified

This is the default condition. The search is determined by the target database. Some databases (including ChemFinder and ISIS) find compounds with any substitution at this atom and some databases (including DARC) find only compounds with substitution exactly as drawn.

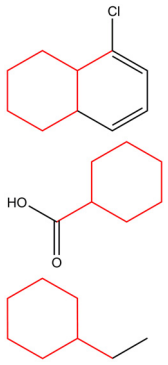
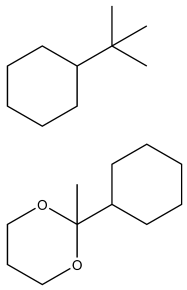
For links to other properties, see Bond Properties.

Substituents: Free Sites

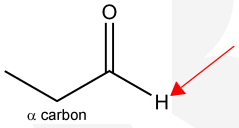
Description:	Indicates the maximum number of substituents, in addition to those drawn, that may be present on an atom.
Application:	This property is only meaningful in a substructure search.
Example:	In a substructure search, the query:



This atom is marked with the atom property ***Substituents>FreeSites:2***

finds any of:	does NOT find any of:
	

In the figure below, the carbonyl carbon, indicated by the arrow, has a substituent count of two: the alpha carbon and the aldehyde oxygen. The double bond to the aldehyde oxygen counts as only one substituent and hydrogen atoms never count as substituents.

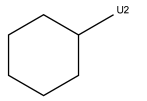


TIP: Specifying Free Sites: 0 is a quick way to indicate that you want no further substitution at a site. Target structures will match the query structure as drawn, with no additional ligands.

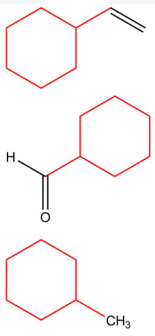
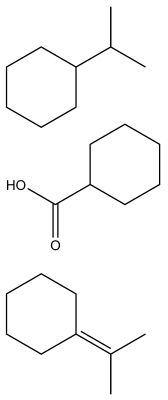
For links to other properties, see Atom Properties.

Substituents: Up To

Description:	Indicates the maximum number of substituents, including those drawn, that may be present on an atom.
Application:	This property is only meaningful in a substructure search.
Example:	In a substructure search, the query:



This atom is marked with the atom property ***Substituents>Up to:2***

finds any of:	does NOT find any of:
	

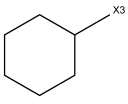
For links to other properties, see Atom Properties.

Substituents: Exactly

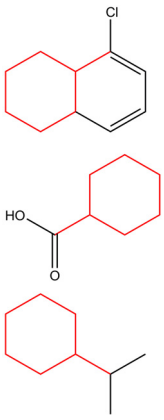
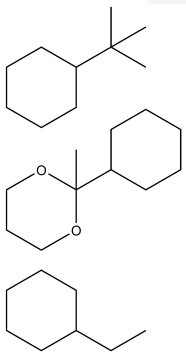
Description: Indicates a precise value for the number of substituents, including those drawn, that may be present on an atom.

Application: This property is only meaningful in a substructure search.

Example: In a substructure search, the query:



This atom is marked with the atom property ***Substituents>Exactly:3***

finds any of:	does NOT find any of:
	

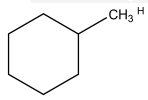
For links to other properties, see Atom Properties.

Implicit Hydrogens

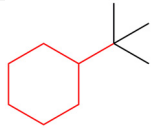
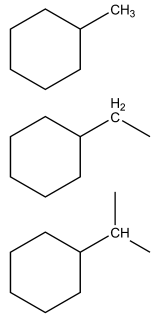
Description: This atom property may have one of two values: Allowed (the default) or Not Allowed. If implicit hydrogens are Not Allowed, the target atom must be fully substituted.

Application: This property is only meaningful in a substructure search.

Example: In a substructure search, the query:



This atom is marked with the atom property ***Implicit Hydrogens>not allowed***

finds any of:	does NOT find any of:
	

NOTE: This atom property does not affect the display of implicit hydrogens, only their presence in a search.

See "Setting Preferences" on page 415 of chapter "Customizing Chemfinder" for more information.

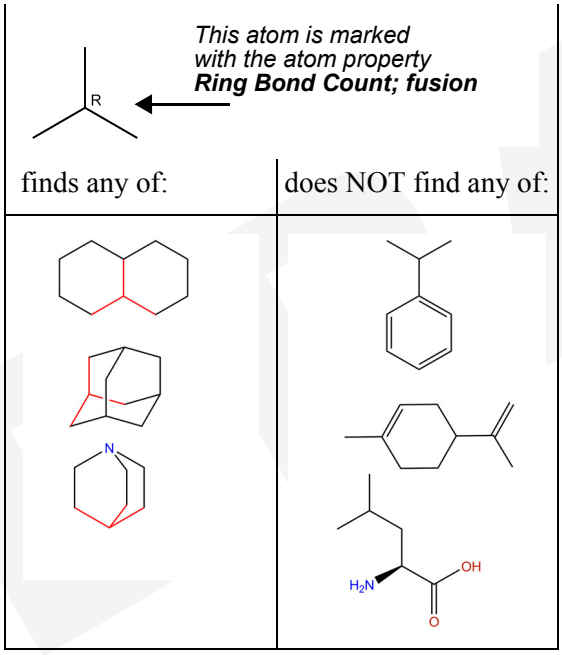
For links to other properties, see Atom Properties.

Ring Bond Count

Description: Indicates the number of bonds attached to an atom that are part of rings of any size. For simple cases, this also specifies the maximum number of rings in which an atom can reside.

Application: This property is only meaningful in a substructure search.

Example: In a substructure search, the query:



The Ring Bond Count property has the following options:

Option	Search Result
Any	*Default.* Finds compounds in which the specified atom can be a member of any type of ring, or a member of no ring at all.
No ring bonds	Finds compounds in which the specified atom is acyclic.
As drawn	Finds compounds in which the specified atom resides in the same type and number of rings as drawn.
Simple ring	Finds compounds in which the specified atom is a member of only one ring (that is, the atom has two ring bonds).
Fusion	Finds compounds in which the specified atom lies at ring fusions (that is, the atom has three ring bonds).
Spiro or higher	Finds compounds in which the specified atom is a member of a spiro or higher linkage (that is, the atom has four or more ring bonds).

For links to other properties, see Atom Properties.

Unsaturation

It is sometimes useful to specify that an atom must, or must not, be attached to unsaturated (aromatic, double, or triple) bonds. The Unsaturation property has two options: Must be Absent and Must be Present. Thus, you can search for targets where all bonds to the speci-

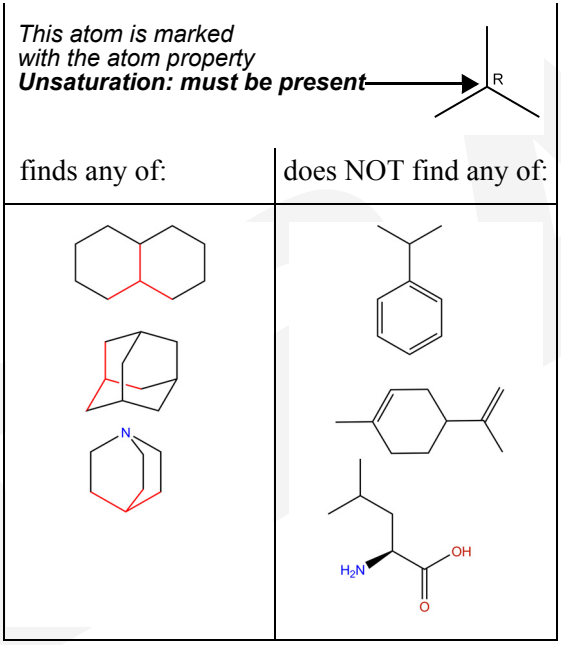
fied atom are single, or for targets where the atom has at least one multiple bond.

The default value, Undefined, finds targets without regard to the hybridization of the atom.

Description: Indicates whether a multiple bond is attached to the specified atom.

Application: This property is only meaningful in a substructure search.

Example: In a substructure search, the query:



For links to other properties, see Atom Properties.

Reaction Change

Description: Indicates whether a change occurs at a specified atom after a reaction.

Application: This property is only meaningful when searching a database containing chemical reactions.

Example:

The Reaction Change property has the following options:

Option	Search Result
May be anything	*Default.* Finds all reactions regardless of any change to the specified atom after a reaction.
Must be as specified	Finds all reactions that are changed at the specified atom exactly as specified by the reaction center property in the Atom Properties dialog box.

For links to other properties, see.

Reaction Stereo

Description: Indicates that the specified atom is a stereo center in a reaction.

Application: This property is only meaningful when searching a database containing chemical reactions.

Example:

The Reaction Stereo property has the following options:

Option	Search Result
Any	*Default.* Finds all compounds regardless of the stereochemistry at the specified atom.

Option	Search Result
Inversion	Finds compounds in which the specified atom has an inverted stereo configuration after a reaction.
Retention	Finds compounds whose specified atom has an unchanged stereo configuration after a reaction.

For links to other properties, see Atom Properties.

Translation

Description: Indicates what is required to match in the structure query and possible database hits in a Markush DARC query.

Application: This property is only meaningful when searching a DARC database.

Example:

The Translation property has the following options:

Option	Search Result
Equal	*Default.* Matches specific to specific or generic to generic terms.
Broad	Translates a specific query atom to a corresponding superatom in the database.
Narrow	Translates a query superatom to a corresponding specific atom or group in the database.
Any	Translates generic or specific terms to any term.

Old CD manual says: "For more information, refer to the Markush DARC User Manual." I don't know if such a manual exists.

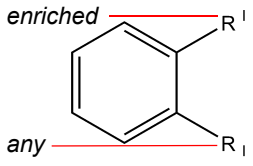
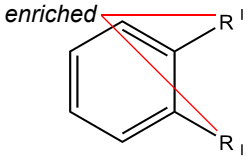
For links to other properties, see Atom Properties.

Isotopic Abundance

Description: Distinguishes between different isotopic compounds by specifying a nuclide at any location.

Application: Any search.

Example: In a database containing both mono- and hexadeutero benzene,

the substructure search: *isotopic abundance:*	the substructure search: *isotopic abundance:*
	
hits both mono- and hexadeutero benzene.	hits only the hexadeutero benzene.

The Isotopic Abundance property has the following options:

Option	Search Result
Unspecified	*Default*
Any	For ChemFinder, the same as unspecified. Included for compatibility with other systems where the default may be different.
Natural	Indicates an isotopically unmodified nuclide.
Enriched	Indicates a mixture of isotopically substituted and isotopically unmodified nuclides.
Deficient	Indicates a depleted label, that is, the nuclide is present in less than the natural ratio.
Nonnatural	Indicates an isotopically substituted nuclide, that is, essentially all the molecules of the compound have only the indicated nuclide.

For links to other properties, see Atom Properties.

Abnormal Valence

Regardless of source (user-drawn or file input), many databases contain structures with valence errors, that is, atoms with too many or too few bonds. Other structures may have apparent valence errors that could be resolved by normalization or more advanced bonding models. The Abnormal Valence property was designed to facilitate queries in such circumstances.

Description: Indicates whether a specified atom can have a valence other than normal.

Application: Any search.

Example:

This atom property may have one of two values: Allowed or Not Allowed (*default*). When Abnormal Valence is allowed, the query finds compounds with the specific valence drawn. When not allowed, it finds compounds where the specified atom only has valences that are "normal" for that element (as defined in the Isotopes Table file in the *ChemDraw* Items folder). If necessary, hydrogen atoms are automatically added to, or removed from, the atom before transferring it to the chemical database. The property does not provide a visual indicator.

NOTE: If Abnormal Valence is Allowed, any Invalid Valence messages for that atom are ignored automatically by the Check Structure command.

For links to other properties, see Atom Properties.

Atom Special Types

Description: A generic symbol used in place of specific elements.

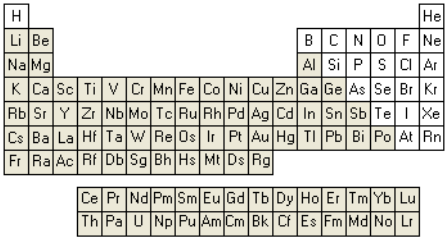
Application: Any search.

Example: In a structure search, the structure:

finds any halogen.

There are six special atom types that are used to match any one of a predefined set of elements:

Atom Label	Search results
R	matches any atom, including hydrogen
A	matches any non-hydrogen atom
Q	matches any heteroatom (non-hydrogen, non-carbon)
X	matches any halogen (F, Cl, Br, I, At)
M	matches any metal atom (shaded in the figure, below)
LN	matches a link node (placeholder for unspecified atoms). See “Searching Link Nodes and Multivalent Rs (MVRs)” on page 413 of chapter “Searching”for details.



ATOM LISTS

Description: A list of atoms enclosed in brackets, used in place of an element, one of which must match the target atom.

Application: Any search.

Example: In a structure search, the structure:

—[Cl,Ag,N]

finds any chain ending with Cl, Ag, or N.

Note that:

- The maximum length of an atom list is five atoms.
- Atom lists may contain only elements.
- Atom lists may not contain:
  - Special atom types
  - Nicknames (Ph)
  - Structural fragments (NH_2, OCH_2CH_3).

ATOM NOT-LISTS

Description: A list of atoms enclosed in brackets, used in place of an element, NONE of which may match the target atom.

Application: Any search.

Example: In a structure search, the structure:

—[NOT O,S,Se]

finds chains that end in any atom other than O, S, or Se.

Note that:

- Atom Not-Lists begin with the upper case word NOT.
- Atom Not-Lists have the same restrictions as atom lists, that is, elements only and a maximum length of five.

Bond Properties

Bond properties are divided into three categories:

- Bond Type
- Bond Topology
- Reaction Type

The first two may be used in any search; the third is only meaningful when searching a database containing chemical reactions.

See Also: Atom Properties

Bond Type

In general, bonds are matched as drawn. If you use the bond properties to select a different bond type from the one drawn, the drawing will change to reflect your choice. The follow-

ing tables describe the bond types understood by CambridgeSoft products

Bond		Description
	Plain	Single bond, unspecified stereochemistry.
	Dashed	Single bond, "up" stereochemistry (out of the plane of the paper, toward the viewer), *from* the first drawn atom *to* the second drawn atom.
	Hashed	
	Hashed Wedged	
	Bold	Single bond, "up" stereochemistry (out of the plane of the paper, toward the viewer), *from* the first drawn atom *to* the second drawn atom.
	Bold Wedged	
	Hollow Wedged	
	Wavy	Single bond, mixture of "up" and "down" stereochemistries in some unspecified proportion.
	Dative	Dative bond. Often used to indicate polar bonds, such as the N-O bond in pyridine N-oxide.

Table 9.1 Single bond types

Bond		Description
	Plain	Double bond, with *cis*/*trans* stereochemistry as drawn.
	Bold	
	Either	Double bond, with *cis*/*trans* stereochemistry unknown.
	Aromatic	Part of a delocalized resonance system.
	Tautomeric	Either single or double according to rules of tautomerism.

Table 9.1 : Double bond types

Bond		Description
	Plain	Triple bond.
	Plain	Quadruple bond.

Table 9.1 : Higher order bond types

Bond query types match more than one type of bond in the target.

Query		Search Result
	Any	Matches any bond type in the target.

Table 9.2 : Bond query types

Query		Search Result
S/D	S/D	Matches either a single or double bond.
S/A	S/A	Matches either a single or aromatic bond.
D/A	D/A	Matches either a double or an aromatic bond.

Table 9.2 : Bond query types

See Also: Bond Topology
Reaction Type

Bond Topology

The topology indicator specifies whether bonds in the target must be in a ring or a chain. The default is Unspecified, which can match either.

Topology		Search Result
	Unspecified	Any topology.
Rng	Ring	The target bond must be part of a ring (and specifically not part of a chain).
Chn	Chain	The target bond must be part of a chain (and specifically not part of a ring).

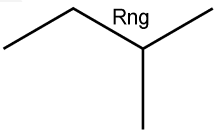
Table 9.3 : Bond topology

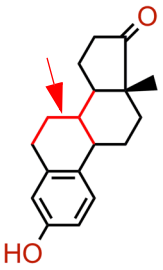
Topology		Search Result
R/C	Ring or chain	The target bond may be part of either a ring or a chain. There is no functional difference between R/C and Unspecified.

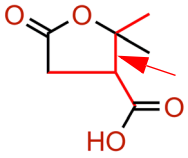
Table 9.3 : Bond topology

EXAMPLE

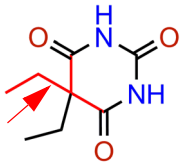
Searching the CS Demo database with isopentane as a substructure gives different hit lists, depending on the specified topology. When topology is unspecified, there are 48 hits. With the topology specified as:



there are 37 hits, including:	but NOT:
 *Estrone*	 *Citronellal*

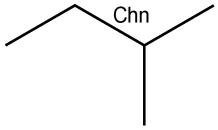


Terebic acid

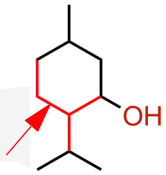
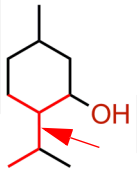


Barbitol

If the topology is changed to:



there are 22 hits, INCLUDING Citronellal and Barbitol, but NOT Estrone or Terebic acid. Note that Menthol appears on both hit lists, but the matching substructure is different.

Ring topology	Chain topology
	

See Also: Bond Type
Reaction Type

Reaction Type

The Reaction Center property specifies how the selected bonds are affected in a reaction. This property is only meaningful when searching a database containing chemical reactions.

Reaction Type	Search Result
Unspecified	*Default.* Matching bonds in the target might or might not participate in the reaction.
Center	Matching bonds in the target participate in the reaction, but the type of change is unspecified.
Make/Break	Matching bonds in the target are either broken or created in the reaction.
Change	Matching bonds in the target change bond order.
Make&Change	Matching bonds in the target are formed, broken, or undergo a change in bond order in the reaction.
Not Center	Matching bonds in the target do not participate in the reaction.
Not Modified	Matching bonds in the target do not change bond order, but might or might not participate in the reaction.

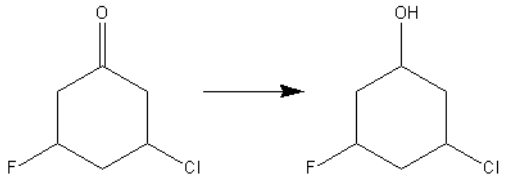
Reaction Type	Search Result
Unmapped	Matching bonds in the target on one side of the reaction arrow might not have corresponding bonds on the other side. *NOTE: This is a CS-only property that has no corresponding value in MDL-format reactions.*

Reaction Searching

The chemical structure search in E-Notebook allows you to search for reactions. In a reaction, one or several compounds (reactants) are transformed into other compounds (products). Individual reactants (or products) are separated from each other with plus signs. The reactants are separated from the products with an arrow.

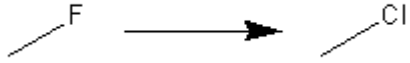
Reaction Centers

The most important part of a reaction is that part that actually changes from the reactants to the products. This part, which normally includes a number of atoms and bonds, is called the reaction center. For example, only the double bond in below figure (and the two atoms on either side) and the two atoms on either side) is part of the reaction center. The rest of the structure is unchanged from the reactant to the product:



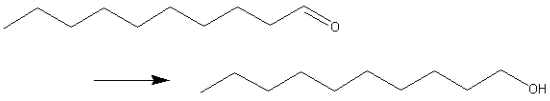
By default, E-Notebook does not consider reaction centers in the search. In order to include the reaction center in the search, you must select the Map Reaction Centers checkbox before running the search.

For example:



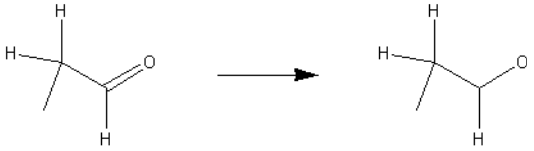
will only hit the reaction shown above if the Map Reaction Centers option is not selected. The reason for this is that, although there is a C-F bond in the target reactant and a C-Cl bond in the target product, these bonds do not participate in the reaction, which affects another part of the compound.

When creating reaction queries, it is important to consider what sort of information you really wish to find. Suppose you want to convert n-decanal to n-decanol:



Are you really interested in these two compounds exclusively? You might be interested

in any reaction that converts a straight-chain aldehyde to the alcohol:

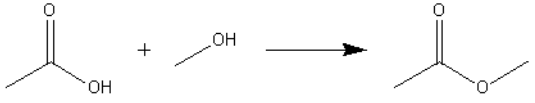


Since the corresponding n-octanol -> n-octanol reaction would probably occur under very similar conditions, it is a reasonable reaction to look at. Generally, you want to use substructure queries that include little beyond the reaction center in question when you are searching for reactions.

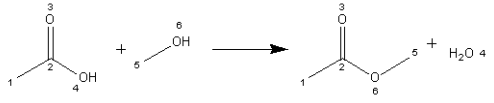
Atom-to-Atom Mapping

In chemical structure fields, you can specify atom maps. These maps can be used during searching to resolve certain type of structure hits.

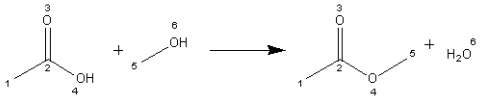
Consider a simple esterification reaction:



Does the ester oxygen come from the acid or the alcohol? You specify the fate of individual atoms through an atom-to-atom map. In reality, the ester oxygen in this reaction originates in the alcohol, so the atom-to-atom map looks like this:



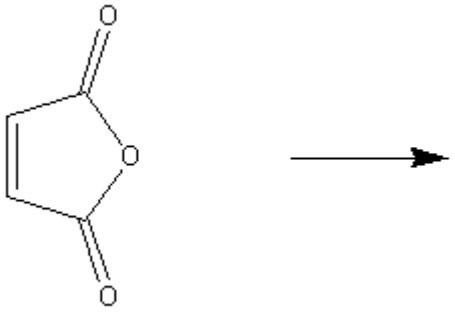
By matching numbers across the arrow, you can see where atoms move during the course of the reaction. The other reaction (not observed experimentally) in which the ester oxygen comes from the acid, would be mapped like this:



E-Notebook uses atom-to-atom map information to determine the reacting centers for reactions. If only some atoms are mapped, E-Notebook uses that information and does not worry about the specific fates of other atoms. Foe example, if you do not know (or do not care) about the mapping of certain atoms, you can leave them unspecified in the-atom-to-atom map.

SEARCHING FOR REACTANTS

If you know what starting materials you are interested in but do not know their products, you might perform a reactants query. A reactants query is very similar to a reaction search, except that there is nothing to the right of the arrow. For example, consider the query:



If you are doing a substructure search, this finds any reactions in which maleic anhydride or a compound containing a maleic anhydride substructure is consumed or transformed.

Searching for Products

If you know the desired end product but not how to get there, you can do a products query. A products query is similar to a reaction

search, except that there is nothing to the left of the arrow. For example, consider the query:

If you are doing a substructure search, this finds any reactions in which bicyclo[2.2.1]heptane or a compound containing its substructure is produced.

Searching with the Search Location Field

The search location field makes it possible for you to select the specific branch of the collection tree over which your search is conducted.

To use the search location field:

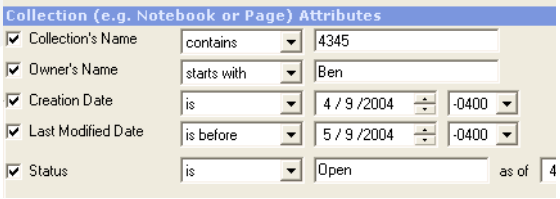
1. While in Search mode with a search form displayed, click the **Search In** checkbox to activate the field.The Collection Tree appears.
2. Then, either:
   - Browse to the root collection over which you wish to select OR
   - Click the **Search** button inside the search location field to search for the root collection. The collection that appears at the top of the Collection Tree in the search location field is the collection over which your search will be run. This root collection, all of its contained collections, and all of the collections referenced within it in the collection hierarchy will be included in the search.

Searching with Collection Attributes

You may search for collections and sections in E-Notebook based on specific attributes, such as owner's name and creation date.

To conduct a search for collections:

1. While in Search mode, select **Collections** or **Sections** from the **Search for** drop-down list.
2. If no form appears in the right frame, click the **New Query** icon.A menu appears.
3. Select **Basic Query** or **Advanced Query**. An empty query form appears.
4. If you would like to search by collection attributes, select the checkboxes next to any items you would like to include in the query. Selecting a checkbox makes visible an area that allows you to enter criteria.



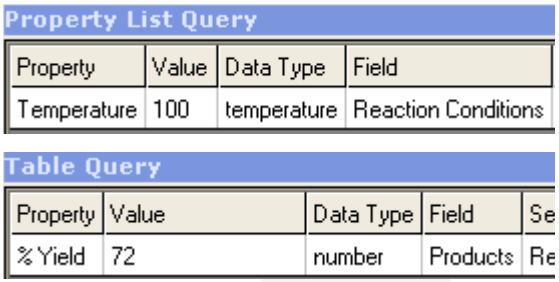
Specify the collection attributes that will determine the search results. The parameters you may enter are:

Parameter	Options
Collection's Name – the name of the Collection	• contains • is • starts with • ends with
Owner's Name – the name of the User who created the Collection.	• contains • is • starts with • ends with

Parameter	Options
Type – the Collection type. Examples are Notebook, Folder, Experiment, or Page.	• is • is not
Creation Date – the date the Collection was created.	• is • is before • is after
Last Modified Date – the date the Collection was last modified.	• is • is before • is after
State Name – the name of the current state of the Collection. Examples are Open and Closed.	• contains • is • starts with • ends with. Each of these options can be specified as of a certain date. For example, Closed as of 2/1/2003 would return the Collections that were in the Closed state on 2/1/2003.

Searching with the Property Query and Table Query Fields

The Property Query Field is used to search over property lists, and the Table Query field is used to search over E-Notebook tables. These search fields are normally found in Advanced Section Query forms.



Adding Properties to the Field

To add properties to a Property Query or Table Query field:

1. Right-click within the field. A menu appears.
2. Select **Add Property**. The Add Property dialog appears, listing the properties that appear in E-Notebook. If properties are already present in the field, the list is filtered to display only those properties that share the same section type:
   - Property Query field – the properties that appear in E-Notebook property lists are displayed.
   - Table Query field – the properties that appear in E-Notebook tables are displayed.
3. Select the properties you wish to include in the search. You may use SHIFT-click and CONTROL-click to select multiple properties. Make sure that all of the properties exist in the same section type, or your search will return no hits.
4. Click the **Add** button. The properties appear in the search form.

Removing Properties from the Field

To remove a property from the field:

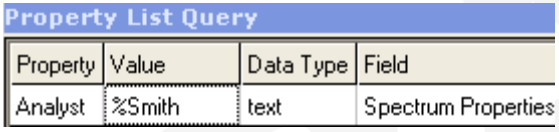
1. Right-click the property you wish to remove. A menu appears.
2. Select **Remove Property**. You are prompted to confirm that you wish to delete the property.
3. Click **Yes**. The property is removed from the query field.

Search Options

You may either search for an exact match, or use one of the following options:

Wildcard searches for text properties:

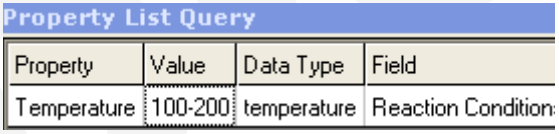
If a property has a Data Type of text, you can conduct a "contains" search. Use the percentage symbol (%)as the wildcard. In the example below, all of the Spectrum sections where the Analyst name ends in "Smith" will be returned.


Property List Query

Property	Value	Data Type	Field
Analyst	%Smith	text	Spectrum Properties

Numerical range searches

If a property has a numerical Data Type, you can search for a range, as shown below:


Property List Query

Property	Value	Data Type	Field
Temperature	100-200	temperature	Reaction Condition

Other numerical searches

Other search options may be used with numerical properties as well:

- **Greater than** – >30 returns all sections in which the property is greater than 30
- **Less than** – <30 returns all sections in which the property is less than 30
- **Greater than or equal to** – >=30 returns all sections in which the property is greater than or equal to 30
- **Less than or equal to** – <=30 returns all sections in which the property is less than or equal to 30.

If you enter units, the search will return all of the equivalent values entered in other units of the same type. For example, a search for a volume of "500 mL" will return both "500 mL" and "0.5L".

The search will assume the default units for the property if you do not enter units. Using the same example, if mL were the default unit for a volume property, and a search were conducted for a property value of "0.5", no hits would be returned. A search for "0.5 L" would return both "500 mL" and "0.5 L".

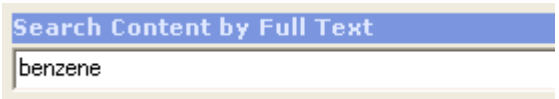
Searching for Text with the Query Text Field

With the Query Text field, you can search for text that is contained in the following E-Notebook fields:

- Styled Text fields
- MS Word fields
- MS Excel fields
- Ancillary data fields that are MS Word, MS Excel, or MS PowerPoint
- E-Notebook property lists
- E-Notebook tables
- Text in chemical structure fields

If you enter text into the Query Text field and you have specified no other search criteria in the search form, all of the sections you have read access to will be searched.

The searches are not case sensitive.


Search Content by Full Text

benzene

A number of basic and advanced text searching options are available to you:

- Basic Text Searching
- Advanced Text Searching

Numerical properties in Property Lists and Tables can be searched, but only as text; that is, if you perform a search for "500*" you will find "500 g", "500 atm", etc.; you cannot search for a numerical range or perform a greater/less than search with the Query Text field. Also, the advanced text searching options do not apply to Property Lists and Tables.

Depending upon your database settings, text entered into MS Word fields and Styled Text fields may not be available for searching immediately after it is entered. There may be a delay of several hours.

Basic Text Searching

You can use basic text searching, or querying, to find information in MS Word and Notes portions of E-Notebook. There are a number of special characters used in basic text searching which will help narrow or increase search results.

Normally, the more narrow a search, the more precise the search results become, making it easier to find the information you need. As a search becomes broader, the number of hits in the search results list becomes greater.

Different types of basic text searching are available. See the following topics for more information:

Exact Phrase Matching

Wildcard Searching

Exact Phrase Matching

If a search is meant to find only exact matches for the text entered, exact word or phrase matching should be used. This is the most simple search, or query, that returns exactly the information requested.

For example, the following searches really mean:

Searching for...	Returns
thymidine synthesis	the words thymidine synthesis in that order, with no words between them in the text of a document.
cyclohexane	the word cyclohexane in the text of a document.

Wildcard Searching

If a prefix or a suffix for a word is either unknown or variable, wildcard characters become useful in a free test search to return all words with the same word root. Wildcard characters can be used in a basic text search when searching for all documents that contain a part of a word. This kind of search typically returns more matches to search criteria than the exact phrase search.

For example, the following searches really mean:

Searching for...	Returns
synth*	any word with synth as the first 5 letters in a document. Matches include synthesis, synthetic, and syntheses.
*ethane	any word in a document with ethane as the last 6 letters. Matches include ethane, and methane.

For wildcard searches in a data field, see “Search Options” on page 89.

Advanced Text Searching

E-Notebook offers a number of advanced text searching options for searching Notes and MS Word documents in the application. Using specific operators in an advanced search allows you to narrow search parameters dramatically.

Escape Characters

In order to perform a query over words or symbols that have special meaning to query expressions, such as & or |, you must escape them. There are two ways to escape characters in a query expression, using curly brackets {} or a backslash \.

Curly Brackets {}

Use braces to escape a string of characters or symbols. Everything within a set of braces in considered part of the escape sequence. When you use braces to escape a single character, the escaped character becomes a separate token in the query. The following table has examples of how to use curly brackets to escape an ampersand (&) and a dash (-).

Instead of	Use
AT&T	{AT&T}
high-voltage	{high-voltage}

Backslash \

Use the backslash character to escape a single character or symbol. Only the character immediately following the backslash is escaped. The following table has examples of how to use a backslash to escape an ampersand (&) and a dash (-).

Instead of	Use
AT&T	AT\&T
high-voltage	high\-voltage’

ABOUT

The ABOUT operator, when used in an advanced text search, retrieves documents that contain information related to a word or phrase.

Use the ABOUT operator by entering the word ABOUT in all capital letters followed by the word or phrase on which to search in parentheses.

ABOUT searches are always case-sensitive. The text string inside the parentheses is interpreted with respect to case.

For example, the following searches really mean:

Searching For...	Returns...
ABOUT (carbon)	any word with words related to carbon in the document. Matches include coal and diamond.
ABOUT (carbon by-products from syntheses at 25 degrees Celsius)	any phrases with words related to “carbon by-products from syntheses at 25 degrees Celsius” in the document.

The ABOUT operator becomes very powerful when coupled with other operators, such as AND or NOT.

For example, the following searches really mean:

Searching For...	Returns...
ABOUT (carbon) AND diamond	any word with words related to carbon as well as the word diamond in the document.
ABOUT (carbon) NOT ABOUT (diamond)	any word with words related to carbon but excluding the word diamond in the document.

NOTE: For advanced Oracle users: The word or phrase specified in an ABOUT query does not have to exactly match the themes stored in the index. Oracle automatically normalizes the word or phrase before performing lookup in the Text index.

AND (&)

The AND operator used in an advanced text search finds documents that contain more than one word or phrase. The AND operator is used to search for documents that contain at least one occurrence of each of the query terms.

The AND operator is used by entering the first term, then the word AND in all capital letters (or entering the ampersand (& symbol)) followed by another word or phrase on which to perform a search.

For example, the following searches really mean:

Searching For...	Returns...
carbon AND diamond	both the words carbon, and diamond, found anywhere within a document.
carbon & diamond	both the words carbon, and diamond, found anywhere within a document.
carbon & diamond & graphite	all the words carbon, diamond, and graphite, found anywhere within a document.
thymidine synthesis AND carbon dioxide	both the phrases thymidine synthesis, and carbon dioxide, found anywhere within a document.

EQUIValence (=)

The EQUIValence operator used in an advanced text search, or query, will allow the user to find documents that contain information about words that can be used in place of each other, alone or in a phrase. The EQUIValence operator is used to specify an acceptable substitution for a word in a query.

The EQUIValence operator is used by, entering EQUIV in all capital letters (or enter the equals sign (=)), followed by the phrase on which the search is to be performed.

For example, the following searches really mean:

Searching For...	Returns...
graphite EQUIV diamond	the words graphite or diamond found anywhere within a document.
graphite = diamond	the words graphite or diamond found anywhere within a document.
carbon dioxide=monoxide	the words carbon dioxide, carbon monoxide, or both terms found anywhere within a document.

NOTE: The EQUIValent operator has higher precedence than all other operators except the expansion operators (fuzzy, soundex, stem).

Fuzzy (?)

The fuzzy operator used in an advanced text search, or query, will find documents that contain words similar to the word used in a search. For example, the fuzzy operator can be used to expand queries to include words that are spelled similarly to the specified term. This type of expansion is helpful for finding more accurate results when there are frequent misspellings, or alternate spellings in the documents in the database.

The fuzzy operator is used by entering a question mark (?), followed by the word on which to perform a search.

For example, the following searches really mean:

Searching For...	Returns...
?boron	any word spelled similarly to boron found anywhere within a document. Matches include baron.
?read	any words spelled similarly to read found anywhere within a document. Matches include read, lead, and real.
?chemist	any words spelled similarly to chemist found anywhere within a document. Matches include chemists and chemistry.

MINUS (-)

The MINUS operator can be used in an advanced text search, or query, to find documents that contain two phrases, with the first phrase taking precedence. The MINUS operator is used to search for documents that contain two query terms, but documents containing the second term will ranked lower than documents without the second term. The MINUS operator is useful for lowering the score of documents that contain a certain term, without eliminating those documents.

The MINUS operator is used by, entering the first term, then MINUS in all capital letters (or enter the minus sign or hyphen (-)), followed by another term on which to perform a search.

For example, the following searches really mean:

Searching For...	Returns...
carbon - diamond	documents containing the words carbon and diamond, but documents with diamond are listed last.
carbon MINUS diamond	documents containing the words carbon and diamond, but documents with diamond are listed last.
diamond -carbon	documents containing the words carbon and diamond, but documents with diamond are listed last.

NEAR

The NEAR operator is used in an advanced text search, or query, to find documents that contain two phrases that are close together. The maximum distance between the two terms can be specified.

The NEAR operator is used by entering the first term, followed by NEAR in all capital letters (or enter a semicolon (;)), followed by the second term on which the search is to be performed.

Use the NEAR operator to return documents based on the proximity of two or more query terms.

NOTE: NEAR cannot be used in ABOUT queries.

For example, the following searches really mean:

Searching For...	Returns...
carbon NEAR diamond	documents containing the words carbon and diamond, but only when they appear less than 100 words apart and in no specific order.
NEAR ((carbon, diamond), 20, FALSE)	documents containing the words carbon and diamond, less than 20 words apart, in no specific order.
NEAR ((carbon, diamond), 20, TRUE)	documents containing the words carbon and diamond, less than 20 words apart, in this specific order.
NEAR ((carbon, diamond), 10) AND benzene	documents containing the words carbon and diamond, but only when carbon and diamond appear less than 10 words apart and in no specific order.
NEAR ((carbon, diamond = graphite), 10)	documents containing the words carbon and diamond, but only when carbon and diamond or carbon and graphite appear less than 10 words apart and in no specific order.

NEAR uses the following defaults:

- Search terms are found if they are 100 words apart or less, unless specified otherwise. Use whole numbers between 1 and 100.

- Search terms are found in any order, specified otherwise. Use TRUE or FALSE.

The NEAR operator can be used with other operators, such as AND, OR, and EQUIValence.

For example, the following searches really mean:

NOT (~)

The NOT operator can be used in an advanced text search, or query, to find documents that contain a word or phrase, but only when it appears without a second word or phrase. The NOT operator is used by, entering the term to be found, followed by the word NOT in all capital letters (or enter a tilde (~)), followed by the term to be excluded in the search.

Use the NOT operator to search for documents that contain one query term and not another.

For example, the following searches really mean:

Searching For...	Returns...
carbon NOT diamond	the word carbon, but not the word diamond anywhere in the document.
carbon ~ diamond	the word carbon, but not the word diamond anywhere in the document.
carbon NOT (diamond OR graphite)	the word carbon, but not the word diamond or graphite anywhere in the document.

NOTE: The NOT operator does not affect other logical operators.

OR (|)

The OR operator can be used in an advanced text search, or query, to find documents that contain information about any words in the query, but not necessarily all words in the query. The OR operator is used by, entering the first term, followed by the word OR in all capital letters (or enter the pipe (|)), followed by another term on which the search is to be performed.

Use the OR operator to search for documents that contain at least one occurrence of any of the query terms.

For example, the following searches really mean:

Searching For...	Returns...
carbon OR diamond	the words carbon, diamond, or both anywhere in the document.
carbon | diamond	the words carbon, diamond, or both anywhere in the document.
carbon OR diamond OR graphite	the words carbon, diamond, graphite, or any combination of the terms anywhere in the document
thymidine synthesis OR carbon dioxide	the words thymidine synthesis, carbon dioxide, or both terms anywhere in the document.

Soundex (!)

The soundex operator is used in an advanced text search, or query, to find documents that contain words that sound like the word used in a search. The soundex operator is used by, entering an exclamation point (!), followed by the word on which to perform a search.

Use the soundex (!) operator to expand queries to include words that have similar sounds; that is, words that sound like other words. This function allows comparison of words that are spelled differently, but sound alike in English.

For example, the following searches really mean:

Searching For...	Returns...
!carben	any words that sound like the word carben in a document. Matches include carbon and carboxcylic.
!read	any words that sound like the word read in a document. Matches include read and lead.

Stem ($)

The stem operator is used in an advanced text search, or query, to find documents that contain words similar to the word used in a search. When the stem operator is used, enter a dollar sign ($), followed by the word on which to perform a search.

Use the stem operator to search for terms that have the same linguistic root as the query term. Stem expands a query to include all terms with the same stem or root word as the search term.

For example, the following searches really mean:

Searching For...	Returns...
$commit	any words with the root commit found in the document. Matches include commits, committing, committee, and committed.

Searching For...	Returns...
$chemist	any words with the root chemist found in the document. Matches include chemist, chemistry, and chemists in them.

Searching for Unannotated Collections

You can search for collections that require annotation, but for which no annotation was provided when changes were made. This search is normally performed by system administrators.

To conduct a search for unannotated collections:

1. While in Search mode, select **Unannotated Versions** from the **Search for** drop-down list.
2. If no query form appears in the right frame, click the **New Query** icon. An empty query form appears.
3. Click the **Search In** checkbox to select it. Select the location for your search. You may browse the tree in this area just as you normally browse the Collection Tree. Alternatively, by clicking the **Search** button at the top of this field, you may conduct a search for the particular branch of the collection tree in which you wish to search for unannotated versions.
4. Do one of the following:
   - Click **Search Now** to execute the query. A results list appears, listing the Collections that match the criteria you specified.
   - Click the **Save Query** button to save the query. The Collection tree appears with a new Collection Search, and you are prompted to give the Collection Search a name.

Your system configuration determines which fields appear in the search form.

Refining a Search

Once you have conducted a search, you can further refine it — performing a search that is:

- An intersection of two searches
- A union of two searches
- The exclusion of one set of search results from another

It is possible to refine both section searches and collection searches.

To do this:

1. From the drop-down list at the top of the query form, choose any of the following options:
   - **Create a New Set of Search Results** — deletes the previous search results and replaces them with the search results generated by the new query.
   - **Refine the Previous Search By Collection** — uses the previous search results to limit the collections in which a search is done. The stored hit list will contain the intersection of the previous search results and the results specified by the new query.
   - **Refine the Previous Search By Section** — uses the previous search results to limit the sections in which the search is done. The stored hit list will contain the intersection of the previous search results and the results specified by the new query. If the current search engine is a collection search engine, then this option is not present.
   - **Exclude Collections from the Previous Search** — excludes collections from the

stored hit list that are part of the previous search results. The stored hit list is completely replaced.

- **Exclude Sections from the Previous Search** — excludes sections from the stored hit list that are part of the previous search results. The stored hit list is completely replaced. If the current search engine is a collection search engine, then this option is not present.
- **Add to the Previous Search** — adds the results specified in the search query to the previous search results. Duplicate collections and/or sections will not be added.
- **Remove from the Previous Search** — removes the results specified in the search query from the previous search results.

2. Fill in the new search criteria.
3. Click the **Search Now** button. The hitlist appears, modified according to the option you chose in step 1.
4. If you wish, you may refine your search further, by selecting another option from the drop-down list.

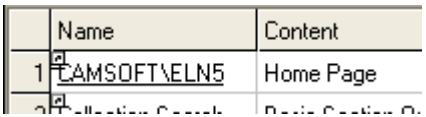
Working with Query Results

When you conduct a Search in E-Notebook, the results are displayed in a list. You can save the results list, and/or view any item on the list.

Viewing Items in a Results List

To view an item on the results list:

- Click the arrow in the upper left corner of the name of the item, as shown below.



- The Collection Tree appears, with the item displayed.

Saving a Results List

To save the results list:

1. Click **Save Results**. A dialog appears, prompting you to browse to the location in the Collection Tree where you would like the results to be saved.
2. Click a collection to select it in the tree, then click the **Save** button. The Collection Tree appears, showing the search results as a new collection. The links are maintained so that you may browse to any of the items.

Customizing the Display of Search Results

You can customize the display of a hitlist, just as you can customize a table of contents. To do this:

- Right-click a column in the hitlist. A menu appears. You may hide the selected column or sort the results list. You may also specify which columns are displayed, using the Show command. See “Working with a Table of Contents” on page 13 for a more detailed description of these options.

Saving a Query

When you create a query in E-Notebook, you may save the query in the Collection Tree.

To save a query:

1. Click the **Save Query** button to the left of the query form. A dialog appears, and you are prompted to select the location where you wish to save the search.
2. Click a collection to select it as the location, and click the **Save** button. The Collection Tree appears, and the query appears in the tree. You are prompted to rename the query. Enter a name for the query The last query

you created will appear by default when you enter Search mode again.

Running a Saved Query

To run a query that is saved in the collection tree:

1. Click the **Browse** button at the top of the screen. The Collection Tree appears.
2. Select the query in the collection tree by clicking it. The query form appears in the right frame.
3. Right-click the section menu icon  , and select **Copy Section**.
4. Click the **Search** button at the top of the screen.
5. From the **Search For** drop-down list, select the type of query that corresponds to the query form you are copying.
6. Right-click the Section menu icon  , and select **Paste Section**. The query form appears.

NOTE: It may be necessary to delete one of the query forms if you do not want to use multiple query forms. See "Removing a Section" on page 65 for more information.

10

Changes and Audit Trail

E-Notebook provides auditing and change control features for compliance with 21 CFR Part 11, which is part of Title 21 of the Code of Federal Regulations for the Food and Drug Administration (FDA). 21 CFR Part 11 sets forth guidelines for keeping, maintaining and authenticating electronic records.

For every change made to E-Notebook data, an audit trail records the logged in identity of the user, the date, and the time. This is done automatically when you add, delete, or update data. The audit trail information is stored in the E-Notebook database.

In addition, E-Notebook may be configured so that you can annotate the changes you make to collections by providing reasons for them.

See the following topics for more information:

Working with the Changes Icon

Saving Changes to a Collection

Annotation of Changes

You can also view prior versions of collections and, if Visual Display of Changes is enabled, you can view and print the changes that were made to the data in a collection.

See the following topics:

- History Pane
- Visual Display of Changes

Working with the Changes Icon

The changes icon appears in the right frame of E-Notebook. The appearance of the icon changes to indicate various conditions:

- 

– When you first select a collection in the collection tree, the changes icon appears as a key in a keyhole. This indicates that you have not made unsaved changes to the collection, and that you have not opened the collection for editing. The changes icon will always appear in this form if the collection is in a read-only state.

- 

– If you click within one of the sections in the collection, the key leaves the hole. This indicates that you have locked the collection for editing, and other E-Notebook users may not edit it at this time. The Release state may also indicate that another user of E-Notebook has the collection open and locked for editing.

- 

– An open book in front of the key indicates that unsaved changes have been made to the collection.

See Saving Changes to a Collection for information about saving your changes.

If you are viewing a previous version, the save icon will not appear.

Saving Changes to a Collection

There are a number of ways in which changes to a collection may be saved. This topic addresses each of these items in detail. They are:

- Clicking the  changes icon.
- Selecting **Save Changes** or **Save and Annotate Changes** from the changes menu.
- Browsing to another collection.
- Through autosave, which your system administrator sets up to automatically save the collection after a set period of time has passed.
- Selecting **Backup Changes** from the changes menu. This option would be used in the event of network failure, to prevent data loss.
- Closing the Internet Explorer browser.

Clicking the Changes Icon

To save your changes using the changes icon:

- Click the changes icon.
- The open book indicates that there are unsaved changes.
- If the changes must be annotated, you will be prompted to enter annotation. If no annotation is required, your changes are saved immediately.
- The saved version will appear in the History Pane.
- The changes icon indicates that your changes have been saved. 

Selecting Save Changes or Save and Annotate Changes from the Changes Menu

This means of saving changes is often used if you wish to provide an optional annotation. To save your changes using a command in the changes menu:

1. Right-click the changes icon. A menu appears.
2. Select either **Save Changes** or **Save and Annotate Changes**. The commands that are available from the menu will depend upon whether annotation of changes is required. If you have selected **Save Changes**, the version of the collection is saved, and appears in the History Pane. If you have selected **Save and Annotate Changes**, you are prompted to enter an annotation.
3. If prompted to enter an annotation, select from the predefined annotations or type in another annotation.
4. Click the **Save** button. The version is saved. The version is listed in the History Pane.

Saving Changes by Browsing to Another Collection

To save changes by browsing to another collection:

- Click another collection in the Collection Tree.
- If your changes must be annotated, you will be prompted to enter annotation. If no annotation is required, your changes are saved immediately.
- The version appears in the History Pane.

Saving Changes through Autosave

Your system configuration may include the autosave feature, which defines the set period of time after which the collection is saved automatically. If autosave occurs and annotation is required, you will be prompted to enter a reason for your changes. To view the autosave interval for a collection, simply right-click the collection and select **Collection Properties** from the menu.

Saving Changes through Backup and Restore

In the event of a network failure, you can save your changes locally, and then add them to E-Notebook at a later time using the Restore command.

To Backup and Restore your changes:

1. Right-click the changes icon. A menu appears.
2. Select **Backup Changes**.The Backup Changes dialog appears, and you are prompted to enter a file name and location.
3. Select a file name and location, and click **OK**.

To restore your changes

1. Browse to the section to which you wish to apply the changes.
2. Right-click the changes icon. A menu appears.
3. Select **Restore Changes**. The Restore Changes dialog appears, and you are prompted to select the file containing the changes.
4. Select the file and click **Open**. Your changes are restored.

Annotation of Changes

E-Notebook may be configured so that you can annotate the changes you make to data in collections. There are two possibilities for providing annotation. They are:

- **Required Annotation** – each time you save the collection, you must provide a reason for the changes you made. You must also provide a reason for the changes if autosave has occurred.
- **Optional Annotation** – you may provide a reason for the changes is you wish, but it is not required.

Whether annotation is required or optional depends upon:

- the **type** of collection and
- its **state**.

For example, an Experiment or Page may be configured such that it has three states: Open, Closed, and Reopened.

- **Open** – the Open state may have optional annotation, so that you may provide a reason for a change if you wish.
- **Closed** – the Closed state may be read-only. It may not be possible to edit the collection while it is in this state.
- **Reopened** – the Reopened state may permit changes, but only if they are annotated each time the collection is saved.

NOTE: In the Enterprise version, three states are Sign and Close, Sign and Keep Open and View Signed Versions

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In some configurations, annotation may be required when you perform a collection transition. For example, it may be necessary to pro-

vide a reason for moving a collection to the Reopened state.

Providing Required Annotation

With required annotation, you must provide a reason for your changes each time you save the collection or an autosave occurs. You must provide the reason before making any further changes. The dialog lists the changes you made to the collection since the last time the collection was saved.

1. Click the changes icon. The annotation dialog appears:

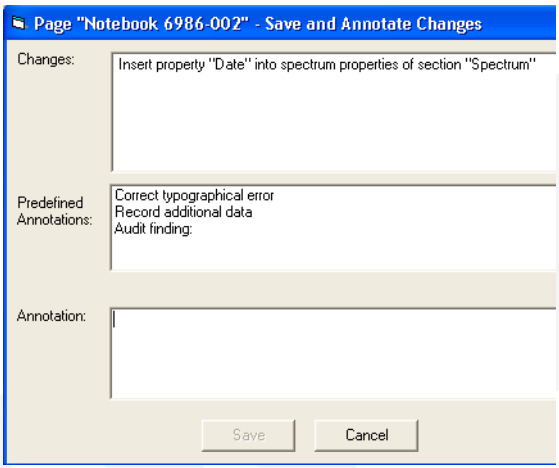


Figure 10.1 Annotation dialog

11. Either click one of the Predefined Annotations to select it, or type another annotation into the bottom box. The Save button is enabled.
12. Click the **Save** button. The version of the collection is saved, along with the annotation. The version is listed in the History Pane.

Alternatively, you may save your changes by simply browsing to another collection. If you have unsaved changes, you will be prompted to enter an annotation.

In some configurations, an autosave may occur after a certain time period has elapsed. If autosave occurs and annotation is required, you will be prompted to enter the annotation for your changes.

Providing Unprompted, Optional Annotation

With Optional Annotation, you may provide a reason for your changes at any time. You initiate providing the reason; it is not mandatory. To provide optional annotation:

1. Click the changes icon. A menu appears.
2. Select **Save and Annotate Changes**. This command will only be available if there are unsaved changes. Click a predefined annotation or type in another annotation.
3. Click the **Save** button. The version is saved, along with the annotation. The version is listed in the History Pane.

History Pane

The History Pane indicates whether prior versions of a collection exist, and enables you to view those versions. A version of the collection is created each time the collection is saved. For each version, the history pane shows the date, time, and the action name - which may be save, autosave, or a transition name.

To view the History Pane of a collection:

1. Right-click the collection in the Collection Tree. The collection menu appears:
2. Select **Show History**. The History Pane appears in a pane below the Collection Tree. It displays all versions and transitions for the collection, in reverse chronological order. A save operation is denoted with a

paper and pencil icon. A collection transition is denoted with a rubber stamp icon.

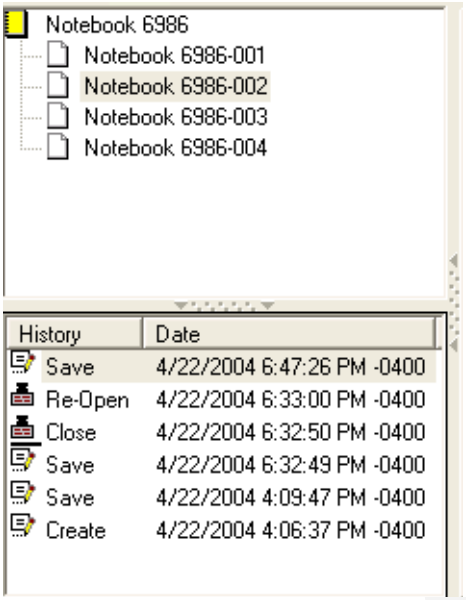


Figure 10.2 The History pane

11. To view a particular version, click the version in the History Pane. The version is displayed in the section frame, to the right. The changes icon is not visible when you are viewing older versions of a collection.

To view the properties of a version of a collection:

1. Right-click the version in the history pane. Select **Properties** from the menu that appears.

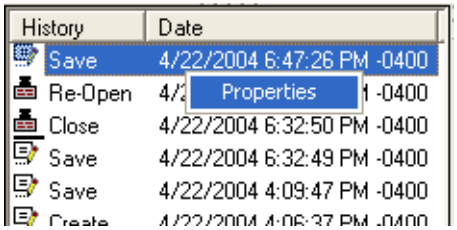


Figure 10.3 Viewing history pane properties

11. The Version Properties dialog appears. The dialog displays the following information about the version you selected:
    - **Name** – the action that created the version (save, autosave, transition name).
    - **Author** – the person who performed the action.
    - **Date** – the date and time the version was created.
    - If there is an annotation associated with the change, the following information appears as well:
        - Person who entered the annotation.
        - Date and time the annotation occurred.
        - Text of the annotation.
12. Click the **Previous** button to view information about the previous version of the collection, or the **Next** button to view information about the next version of this collection.
13. Click **OK** to dismiss the Version Properties dialog.

Specifying an Annotation through the History Pane

It is only possible to specify an annotation through the History Pane for the most recent version of the collection, and only if the state of the collection does not require that changes be annotated.

To enter an annotation for the most recent version of the collection:

1. Right-click the version in the History Pane.
2. Select Properties from the menu that appears. The properties dialog appears. If the version displayed in the properties dialog is unannotated and requires an annotation, the Annotate button is visible.
3. To annotate this version, click the **Annotate** button. The standard annotation dialog appears.

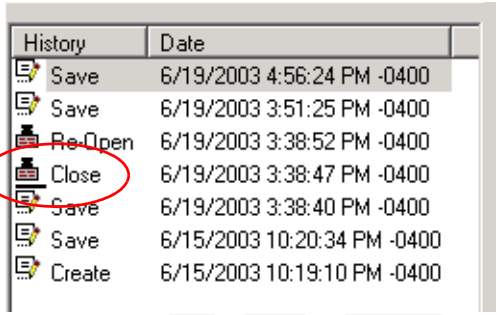
4. Enter the reason for the changes, or select a reason from the predefined list of reasons.
5. Click **OK**. The annotation is saved with the version.

Visual Display of Changes

Depending upon the type of collection and its state, it is possible to view a visual display of changes that have been made to data in the collection. If Visual Display of Changes is enabled, the changes that have been made to a collection can be viewed in E-Notebook, and a record of the changes made will be shown as footnotes in the printed collection.

In some configurations, Visual Display of Changes will be possible from the very beginning of the collection life cycle, when the collection is first created. In other cases, Visual Display of Changes will begin when a particular collection transition is performed; a common example is the transition from a closed, read-only state to a reopened state in which edits are permitted.

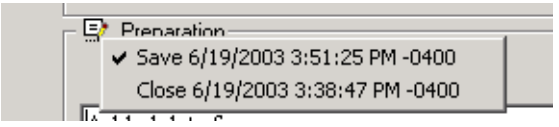
The version of the collection that existed when the Visual Display of Changes began is called the Baseline Version of the collection. It is underlined in the History Pane. In the example below, the Baseline Version in the version that existed when the Close transition was performed. A black line appears under this version.



If visual display of changes is enabled, there is a paper and pencil icon next to data in the section that was changed after the baseline version was created.

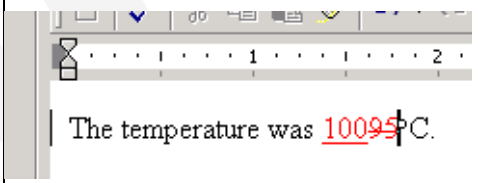
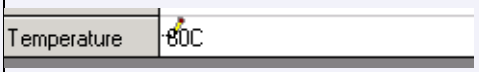
To view an older version of the data:

1. Click the paper and pencil icon that indicates a change was made.A drop-down menu is displayed. The menu displays a list of dates and times for every saved version of this data since the baseline version. The version currently displayed is denoted with a checkmark.



2. To view a particular version, select the corresponding date from the drop-down list. The entire version of the collection as of that date and time is displayed.

Changes are displayed differently for different types of data

Type of Data	Change Display	Example
• Chemical Structure • Database tables • MS Excel Spreadsheet • Spectrum • Stored Document • Styled Text • URL Displays	The data is displayed as it existed when the version was created.	N/A
• MS Word	The change tracking features of MS Word are used: new text is underlined and displayed in red. Deleted text is displayed with red, strikethrough text.	
• Property Lists • Tables	Changed Cells display a pencil icon. New cells display a pencil icon. Deleted cells display an X through them.	Changed or new property:  Deleted property: 

If Visual Display of Changes is enabled, the printed output will include three main portions:

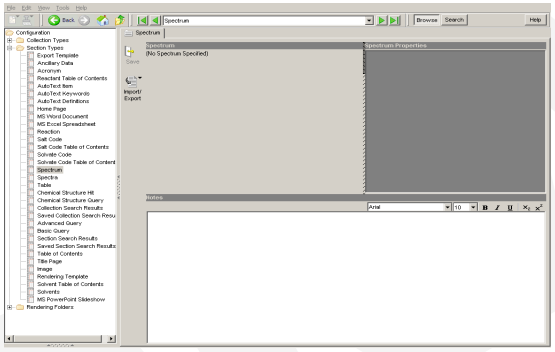
- The data as is exists in the current version.
- The version history, including the date and the author for each version after the baseline version.
- A list of changes grouped by field.

NOTE: Even when the visual display of changes is not enabled, the audit trail still captures the history, and the history pane displays a list of the saved versions and transitions for the collection.

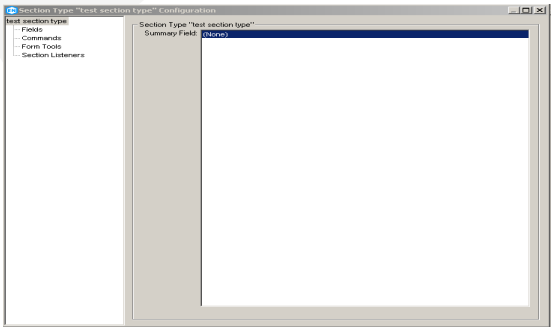
11

Managing Section Types and Forms

Section types are used for displaying and managing data in E-Notebook. Each section type has a single form associated with it. This form appears in the right frame when a section type is selected in the Collection Tree.



To set up a section type, you add fields, form tools, and section listeners. Then, you configure the fields and form tools to create the form. You may also specify a summary field for a table of contents.



Once you have configured the form, you create an export template, which allows users to print sections of this type, and to export them to See “MS Word Sections” on page 55

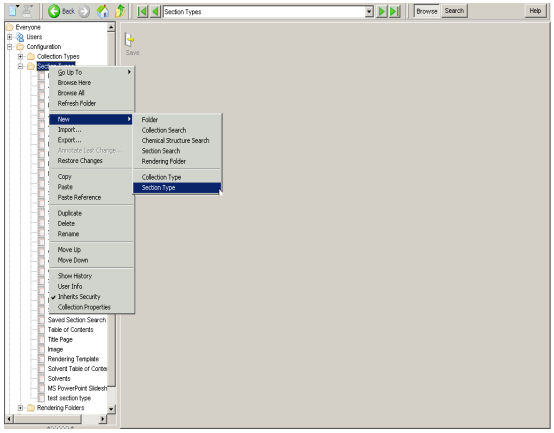
Creating a New Section Type

A section type defines an E-Notebook data section or search section. A section type is composed of fields,

s, section listeners, commands and an export template.

To create a new section type:

1. In the Collection Tree, right-click the folder or collection into which you are adding the section type. The collection menu appears.



2. Select **New>Section Type**. A new section type appears in the Collection Tree; its

blank form appears to the right. You are prompted to enter a new name for the section type.

3. Type in a new name for the section type.
4. Right-click the new section type in the Collection Tree and select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears. This is the dialog through which you add the following components:
   - Fields
   - Form Tools
   - Section Listeners
   - Commands

Managing Fields within a Section Type

You can add fields to a section type, and use them to create a form and an export template. You can also specify which field will appear in the table of contents of a container collection. See the following topics for more information:

- Adding a Field to a Section Type
- Managing Summary Fields in a Table of Contents

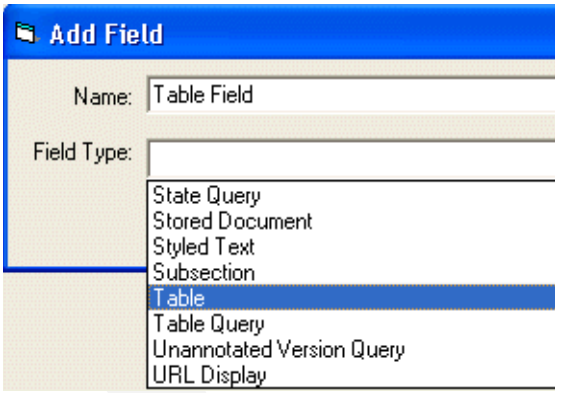
For information about the individual fields and their properties.

Adding a Field to a Section Type

In order to configure a form for E-Notebook, you must first add fields to the section type.

To add a field to a section type:

1. Right-click the section type in the collection tree. The collection menu appears.
2. Select **Section Type Configuration** from the menu. The Section Type Configuration dialog appears.
3. Right-click and select **Fields>New Field**. The **Add Field** dialog appears.
4. Enter a name for the field and select a Field Type. Each type of field has its own, special characteristics and configuration options.



5. Click **Add**. The new field appears in the list of fields.
6. Repeat steps 3 through 5 to add multiple fields to the section type.

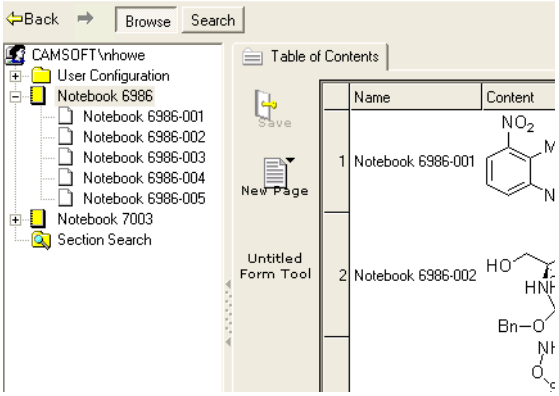
Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for or more information.

Managing Summary Fields in a Table of Contents

For each section type, you can specify a summary field that will appear in the table of contents of a parent collection. The summary field is displayed in the table of contents if that section is the first section in a collection.

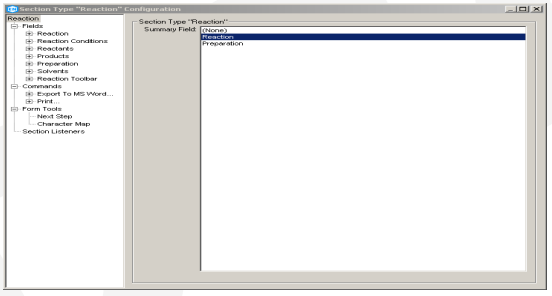
For example, if the chemical structure field is the summary field of a reaction section type, and the reaction section is the first section in a page/experiment, then the reaction drawing

will appear in the table of contents for the notebook.



To set the summary field for a section type:

1. Right-click the section type in the Collection Tree. The collection menu appears.
2. Select **Section Type Configuration** from the menu. The Section Type Configuration dialog appears.



3. In the right frame, click the field that you wish to be the summary field for this section type. You may only select one of the following types of fields as a summary field:
   - a styled text field
   - a chemical structure field
   - a spectrum field
4. Close the dialog.

If you do not specify a summary field, the name of the first section will appear in the table of contents.

Form Tools

If you would like to perform data analysis or messaging within a particular E-Notebook section, you can associate a form tool with that section type. E-Notebook provides several standard form tools. See the following topics for more information:

- Adding a Form Tool to a Section Type
- Viewing and Editing the Properties of a Form Tool
- Removing a Form Tool from a Section Type
- Standard Form Tools

You can also develop your own, customized form tools.

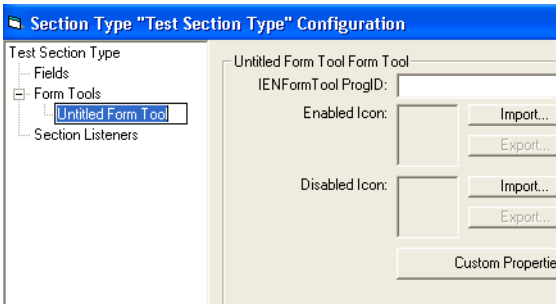
Adding a Form Tool to a Section Type

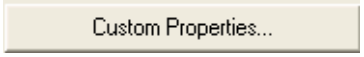
A form tool is used to perform a particular function in an E-Notebook form. E-Notebook provides a number of form tools, such as the Reaction Form Tool, which you can add to new section types you create.

To add a form tool to a section type:

1. Right-click the section type in the Collection Tree. The collection menu appears.
2. Select **Section Type Configuration** from the menu. The Section Type Configuration dialog appears:
3. Right-click **Form Tools>New Form Tool**.

4. A new form tool appears in the tree, and you prompted to name it.



5. Enter a name, and fill in the **IENFormTool ProgID**. This is the programmatic identifier that the Windows registry uses to uniquely identify the object that implements the corresponding interface. The format is OleServerName.ObjectName. For the ProgID's of the standard, E-Notebook form tools, see "Standard Form Tools" on page 113.
6. To associate an Enabled icon with the form tool, click the **Import...** button. A dialog appears, prompting you to select the file icon file.
7. Select the file and click **Open**. The icon is associated with the form tool, and appears in the Enabled Icon box.
8. Associate a disabled icon with the form tool, (following steps 6 and 7, above). This icon will appear when the form tool is disabled.
9. If the form tool has properties to configure, click the 

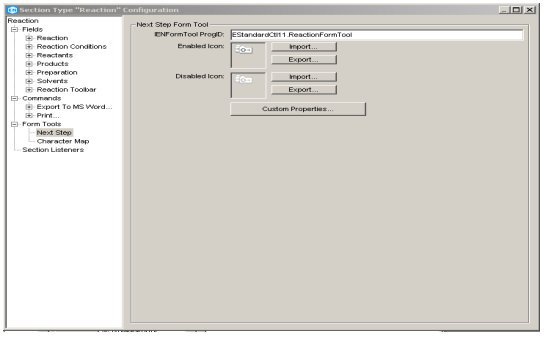
Custom Properties button. The form tool properties dialog appears, and you may configure the custom properties of the form tool.
10. Click **OK** to dismiss the form tool properties dialog. The properties dialog closes.
11. To close the section type configuration dialog, click the close button  in the upper right corner. The dialog closes. The form refreshes, and displays the icon associated with the form tool.

Viewing and Editing the Properties of a Form Tool

You can view and edit the custom properties that are associated with a form tool. For example, you may want to associate the form tool with a different field in an E-Notebook form. Or, if you had developed a form tool to conduct calculations, you may want to change a property that defines the precision of the calculated results.

To view and edit the properties of a form tool:

1. Right-click the section type in the Collection Tree. The collection menu appears.
2. Select **Section Type Configuration** from the menu. The Section Type Configuration dialog appears. .
3. If necessary, click the plus sign next to form tools to expand the list and view the form tools that are associated with the section type. Click the form tool whose properties you wish to view or change.



The ProgIDs and license key information appears to the right. You may edit this information.

4. Click the **Custom Properties** 

button. If the form tool has properties associated with it, the form tool properties dialog appears. If the form tool has no custom properties, a message to that effect is presented, and no properties dialog is displayed.
5. Edit the custom properties if desired, and click **OK** to close the properties dialog.
6. To close the section type configuration dialog, click the close button in the upper right corner. The dialog closes. The form refreshes.

Removing a Form Tool from a Section Type

If you no longer want a particular form tool to be associated with a form, you can remove it from the section type.

To remove a form tool from a section type:

1. Right-click the section type in the Collection Tree. The collection menu appears.
2. Select **Section Type Configuration** from the menu. The Section Type Configuration dialog appears.
3. If necessary, click the plus sign next to form tools to expand the list and view the form tools that are associated with the section type. Right-click the form tool you wish to remove from the form. A menu appears.
4. Select **Delete Form Tool**. A message appears, asking you to confirm that you wish to delete the form tool from the section type.
5. Click **Yes.** The form tool is deleted.
6. To close the section type configuration dialog, click the close button  in the upper right corner. The dialog closes. The form refreshes. If there was an icon associated with the form tool, it no longer appears in the form.

Standard Form Tools

E-Notebook provides a number of standard form tools. The form tools listed below may only be associated with section types. There are several form tools that may only be associated with collection types, for example, the New Section Form Tool. See “Collection Type Form Tools” on page 143 for more information.

See the following topics for more information about the functions and attributes of the section form tools:

- The Next Step Form Tool – creates a new collection with a reaction section containing the products of the selected reaction.
- The New Section Form Tool – creates a new subsection when clicked.
- The Structure Form Tool – allows a user to send a section to the inbox of another collection, such as an experiment or a user collection.
- The Spectrum Form Tool – enables the import of various spectra files, and allows users to copy, paste, import, and export those files.
- The Active Document Form Tool – allows the import and export of MS Word documents and stored document Fields.
- The Insert Reference Form Tool – allows a user to reference to a specific collection type in a target property of a property list.

- The Print Multiple Form Tool – allows a user to print multiple collections with a single action.

The Next Step Form Tool

The Next Step Form Tool is used to create a new page or experiment containing the products of the associated chemical reaction.

In order to use the Next Step Form Tool in an E-Notebook form, one of each of the following types of fields must be present in the form:

- Chemical Structure Field
- Table Field with Reactants Listener
  - Table Field with Products Listener

Form Tool	Form Tool Control ProgID
Next Step	ENStandardCtl11.ReactionFormTool

When you add a Reaction Form Tool to a form, you must configure the following custom properties.

Figure 11.9 Next step form tool custom properties

The E-Notebook User Guide provides more information about the tool and the calculations in the stoichiometry grid. The stoichiometry grid is the combination of the Reactants and Products Fields.

See the related topics below for information about adding the Next Step Form Tool to a section type and editing the properties of the form tool.

The New Section Form Tool

The New Section Form Tool allows users to add new sections to a collection, for example, to a page or an experiment. When users click the form tool they will be presented with a list of the types of sections they may add.

Form Tool	Form Tool Control ProgID
New Section	ENStandardCtl11.NewSectionFormTool

See the related topics below for information about adding the New Section Form Tool to a collection type and editing the properties of the form tool.

The New Subsection Section Form Tool

The New Subsection Form Tool allows users to add new subsections to a section. For example, a user may add new spectrum subsections to a spectra section. When users click the form tool they will be presented with a list of the types of sections they may add.

Form Tool	Form Tool Control ProgID
New Subsection	ENStandardCtl11.NewSubsectionFormTool

The Structure Form Tool

The Structure Form Tool is used to perform the Analyze Structure command. The Analyze Structure command populates a property list with the chemical formula and molecular weight of the associated chemical structure.

In order to use the Structure Form Tool in an E-Notebook form, one of each of the following types of fields must be present in the form:

- Chemical Structure Field
- Property List — containing:
  - a “Molecular Weight” property **and**
  - a “Molecular Formula” property.

Form Tool	Form Tool Control ProgID
Structure	ENStandardCtl11.Structure-FormToolCtl

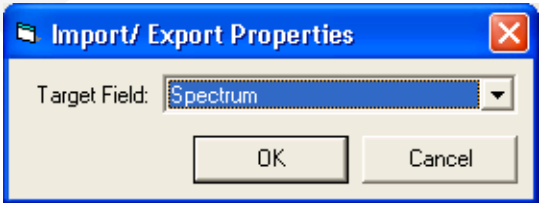
The Spectrum Form Tool

The Spectrum Form Tool is used in conjunction with a spectrum field to import and export spectral data from a file into an E-Notebook section.

Form Tool	Form Tool Control ProgID
Spectrum	ENStandardCtl11.Spectrum-FormTool

In order to use the Spectrum Form Tool in a form, a Spectrum Field must be present in the form.

When you add a Spectrum Form Tool to a form, you must configure the following custom properties:



See the related topics below for information about adding the Spectrum Form Tool to a section type and editing the properties of the form tool.

The Active Document Form Tool

The Active Document Form Tool is used in to import and export documents to and from an E-Notebook Section. When the form tool can also compute the checksum for the uploaded file and display it in a property list.

Form Tool	Form Tool Control ProgID
Active Document	ENStandardCtl11.ActiveDoc-FormTool

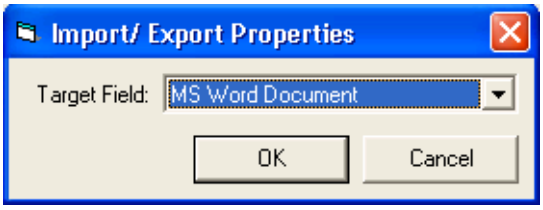
In order to use the Active Document Form Tool in an E-Notebook form, the following types of fields must be present in the form:

- Active Document Field **OR**
- Stored Document Field **OR**
- Excel OLE Control Field

To display the checksum, source file path, and source file name, the section type must also contain a property list with the following properties:

- Source File Name
- Source Path
- Checksum

When you add an Active Document Form Tool to a form, you must configure the following custom properties:



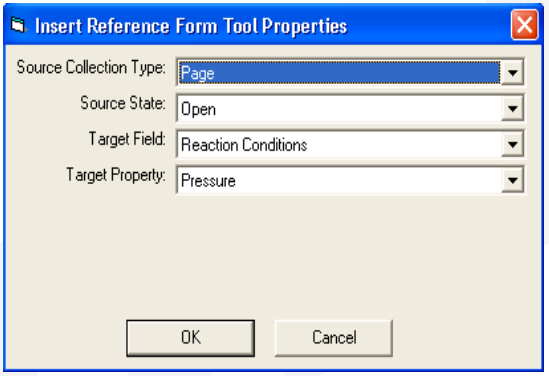
The Insert Reference Form Tool

The Insert Reference Form Tool makes it possible for users to insert references to a specific collection type into a target property in a property list.

Form Tool	Form Tool Control ProgID
Insert Reference	ENStandardCtl11.InsertReferenceFormTool

In order to use the Insert Reference Form Tool in an E-Notebook form, a Property List field must be present in the form.

When you add a Insert Reference Form Tool to a form, you must configure several custom properties.



- **Source Collection Type** – the type of collection that a user may reference in the target property.
- **Source State** – the state that the collection must be in when the reference to it is created.
- **Target Field** – the property list field in which the user may create the reference.
- **Target Property** – the specific property in the property list to which the user may add the reference.

In this example, a user may add a reference to a collection of type Page. The collection must be in an Open state when the reference is created.

NOTE: To prevent users from adding references to other collection types, you must make the target property read-only in the property list. This will prevent users from dragging or copying other references into the property, and force them to use the Insert Reference Form Tool.

See the related topics below for information about adding the Insert Reference Form Tool to a section type and editing the properties of the form tool.

The Print Multiple Form Tool

The Print Multiple Form Tool allows a user to print multiple collections with a single action.

Form Tool	Form Tool Control ProgID
Print Multiple	ENStandardCtl11.PrintMultipleFormTool

If the collection containing the section in which the form tool appears has contained collections or references, a dialog box appears when the user selects the Print Multiple form tool. The dialog allows the user to specify the range of contained collections to be printed.

The Print Multiple Form Tool has no custom properties.

Section Listeners

A Section Listener modifies the behaviors of sections — such as the add, duplicate, remove, move and rename behaviors. E-Notebook provides several standard section listeners, which you may add to section types.

See the following topics for more information:

- Adding a Section Listener to a Section Type
- Viewing and Editing the Properties of a Section Listener
- Removing a Section Listener from a Section Type
- Managing the Standard Section Listeners

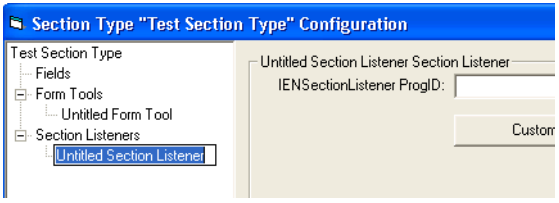
You may also develop your own section listeners to further customize the behavior of sections in E-Notebook.

Adding a Section Listener to a Section Type

A section listener modifies the behaviors of sections — such as the add, duplicate, remove, move and rename behaviors.

To add a section listener to a section type:

1. Right-click the section type in the Collection Tree. The collection menu appears.
2. Select **Section Type Configuration** from the menu. The Section Type Configuration dialog appears.
3. Right-click **Section Listeners**>**New Section Listener**. A new Section Listener appears in the tree, and you prompted to name it.



4. Enter a name for the section listener
5. Fill in the following information:
   - **IENSectionListener ProgID** - the programmatic identifier that the Windows registry uses to uniquely identify the object that implements the corresponding interface. The format is OleServerName.ObjectName.
6. For the ProgID's of the standard, E-Notebook section listeners.
7. If the section listener has properties to configure, click the **Custom Properties** button. The section listener properties dialog appears. and you are prompted to configure the custom properties.
8. Click **OK** to dismiss the section listener properties dialog. The dialog box closes and the form refreshes.

Viewing and Editing the Properties of a Section Listener

You can view and edit the properties that are associated with a section listener.

To view and edit the properties of a section listener:

1. Right-click the section type in the Collection Tree. The collection menu appears.
2. Select **Section Type Configuration** from the menu. The Section Type Configuration dialog appears.
3. If necessary, click the plus sign next to Section Listeners to expand the list and view the section listeners are associated with the section type. Click the section listener whose properties you wish to view or change. The ProgID's and license key information appears to the right. You may edit this information if you wish.

4. Click the **Custom Properties** button. If the section listener has custom properties associated with it, the section listener properties dialog appears. If the section listener has no custom properties, a message to that effect is presented, and no properties dialog is displayed.
5. Edit the custom properties if desired, and click **OK** to close the properties dialog.
6. To close the section type configuration dialog, click the close button in the upper right corner.
   The dialog closes. The form refreshes.

Removing a Section Listener from a Section Type

If you no longer want a particular section listener to be associated with a section type, you can remove it from the section type.

To remove a section listener from a section type:

1. Right-click the section type in the Collection Tree. The collection menu appears.
2. Select **Section Type Configuration** from the menu. The Section Type Configuration dialog appears.
3. If necessary, click the plus sign next to Section Listeners to expand the list and view the section listeners are associated with the section type.
4. Right-click the section listener you wish to remove and select **Delete Section Listener** from the menu that appears. A message appears, asking you to confirm that you wish to delete the section listener.
5. Click **Yes**. The section listener is removed from the section type

Standard Section Listeners

E-Notebook provides a number of standard Section Listeners, which you may add to section types.

See the following topics for more information about their functions and attributes:

- Fixed Section Name Listener –prevents the user from renaming the section.
- Required Section Listener –prevents the user from deleting the section at any time.
- Audit Section Listener –prevents a user from deleting the section only if it has been modified since it was created.

Managing the Required Section Listener

The Required Section Listener prevents users from deleting sections of this type. For example, you may have a Results section that is mandatory with each Experiment/Page.

Section Listener	IENSectionListener ProgID
Required Section	ENStandard11.RequiredSectionListener

See the related topics below for information about adding the Required Section Listener to a Section Type.

The Fixed Section Name Listener

The Fixed Section Name Listener prevents users from renaming sections of this type. For example, you may have a procedure section associated with each experiment/page, and you

may always want the section to bear the name “Procedure”.

Section Listener	IENSectionListener ProgID
Fixed Section Name	ENStandard11.FixedSectionNameListener

See the related topics below for information about adding the Fixed Section Name Listener to a section type.

The Audit Section Listener

The Audit Section Listener prevents a user from deleting a section of this type if it has been modified since it was created.

Section Listener	IENSectionListener ProgID
Audit	ENStandard11.AuditSectionListener

See the related topics below for information about adding the Audit Section Listener to a section type.

Configuring a Form

Each section type in E-Notebook has a single form associated with it. The form is what users see when they create sections of this type.

You can configure a form to display data in the most effective way. Boxes are the building blocks of forms. You can add boxes to forms, delete them from forms, and manipulate their sizes and properties. You insert the fields you wish to appear in a form into the boxes.

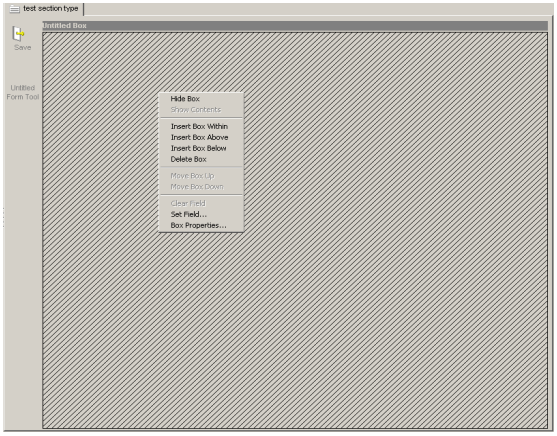
Configuring a New Form

When you create a new section type, you must configure its form. Initially, the form has a single, root box. You configure the form by adding additional boxes, and then inserting fields into those boxes.

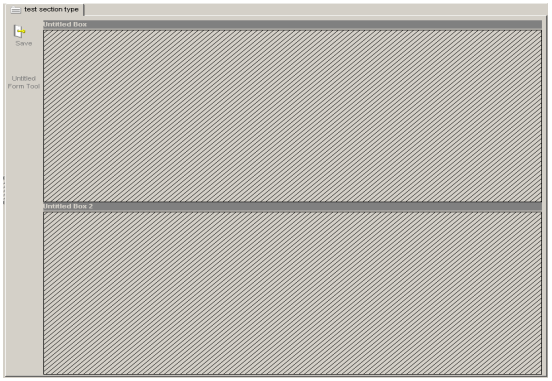
The configuration created in the steps below is an example. There are many ways in which boxes may be organized within the form.

To configure a new form:

1. Right-click within the root box. A menu appears.
2. Select **Insert Box Within**.A box appears within the root box. The hashed lines indicate that there is a box behind the top box.
3. Right-click within the inner box, and select **Insert Box Above** from the menu that appears.

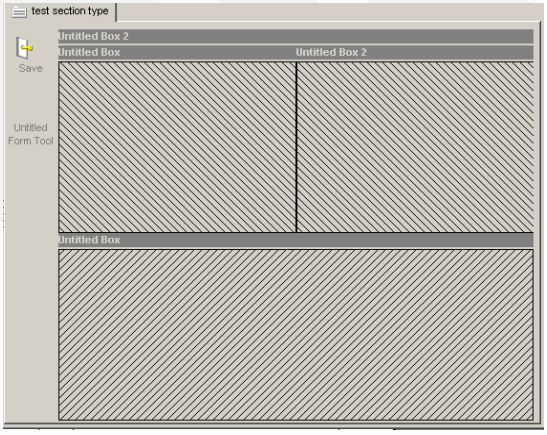


A box appears on top of the box you selected. There are now two boxes, one on top of the other, within the root box.



The next step you take depends upon the form layout you seek. In this example, we will configure the form so that there are two fields in a row on top of another field, for a total of three fields in the form.

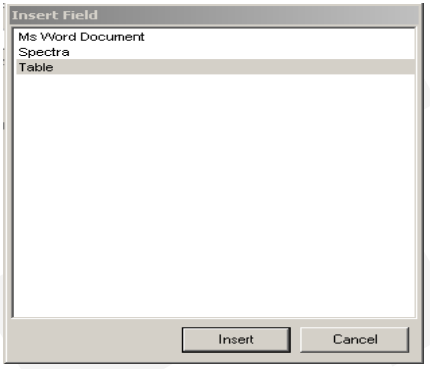
4. Right-click within the top box, and select **Insert Box Within**.
5. Right-click within the new box, and select **Insert Box to the Right**. A box appears to the right of the box you selected.



Setting the Fields in Boxes

To set the field within a box:

1. Right-click within the box. A menu appears.
2. Choose **Set Field**. A dialog box appears, listing the fields that you have added to the section type.



3. Click the field you wish to insert into the box, and click **Insert**. The field appears in the box. Any edits you make to the field will appear in E-Notebook when a user creates a section of this type.
4. Repeat steps 1 through 3 for the other boxes. Once a field has been set in a box, you may access the box menu by right-clicking the frame of the box.

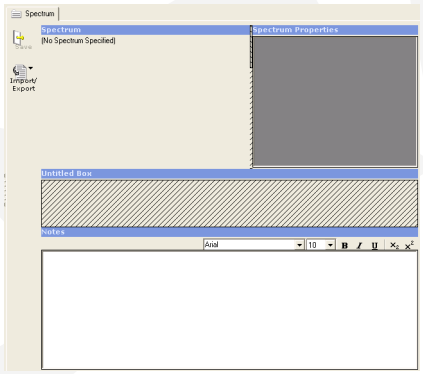
NOTE: The orientation of a box is determined by the orientation of its container. For example, say that Insert Box Above and Insert Box Below are menu options for Box X. Then, you insert Box Y within Box X, by using the Insert Box Within command. The menu options for Box Y will include Insert Box to the Right and Insert Box to the Left. If you inserted Box Z into Box Y, the menu options for Box Z would include Insert Box Above and Insert Box Below. By default, the orientation of the container box is opposite the orientation of the contained box.

Reconfiguring an Existing Form

In some cases, you may want to reconfigure a particular form, adding new fields, removing existing fields, or changing the layout of the fields in the form. For audit reasons, it is not possible to remove a field from a form if that form is in use.

Adding a Field to an Existing Form

1. Click the section type of interest in the Collection Tree. The form for the section type appears in the right frame.
2. Right-click the frame of the box that is to be adjacent to the new box you are adding. The box menu appears.
3. Select a menu option to add a new box to the form. In this example we are selecting **Insert Box Above** to add a box above the Metadata Properties box. The new box appears in the form.



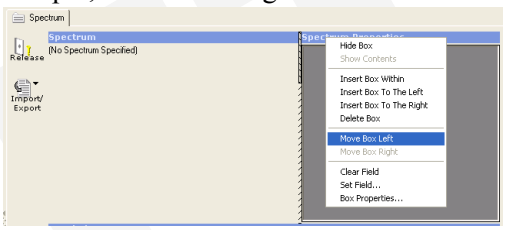
4. Right-click within the new box, and select **Set Field** from the menu that appears. The Insert Field dialog appears, listing the Fields that have been added to the section type.
5. Select the field to be inserted, and click **Insert**. The field appears in the form.

Rearranging Boxes in a Form

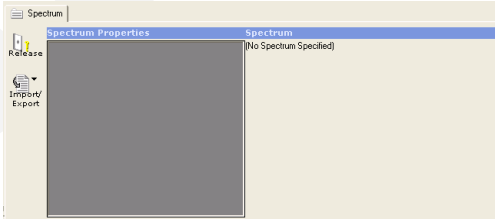
You may change the layout of the form by rearranging the boxes, as follows:

1. Right-click the frame of the box that you wish to move. The box menu appears.
2. Select one of the options for moving the box. (Depending upon the orientation the box, either 1) **Move Box Left** and **Move Box Right**, or 2) **Move Box Up** and **Move Box Down** will appear in the menu). In this example, we are moving a box to the lef

1



2



The box is moved according to the selection you made.

Deleting a Box from a Form

If you no longer want a particular box to be part of a form, you may delete it. If you delete a box that contains a field, there must be an empty box for the field elsewhere in the form.

To delete a box from a form:

1. Right-click the frame of the box you wish delete. A menu appears.
2. Select **Delete Box**. The box is deleted from the form.

If the box contains a field, and you have customized the field for this form, you can add the

field to another box in the form and your changes to the field will be maintained.

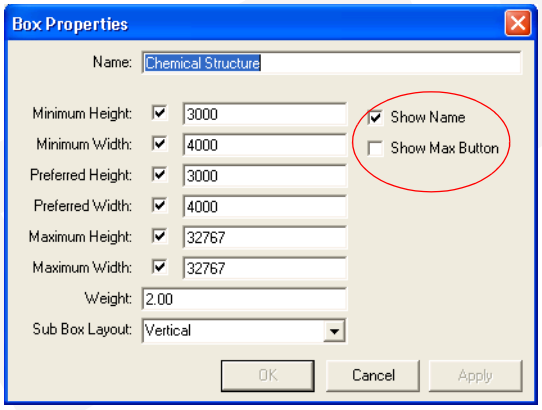
Showing and Hiding the Max Button for a Box

In a form, each box may have a max button associated with it. The button appears in the upper right corner of the box. When a user clicks the button, the field expands to fill the entire section display. (Clicking the max button again returns the field to its original size).

Hiding the Max Button

To hide the max button for a box:

1. Right-click the frame of the box. The box menu appears.
2. Select **Box Properties**. The Box Properties dialog appears.
3. Click the **Show Max Button** checkbox to clear it.



4. Click **OK**. The dialog closes, and the max button is no longer visible in the box.

Showing the Max Button

To show the max button for a box:

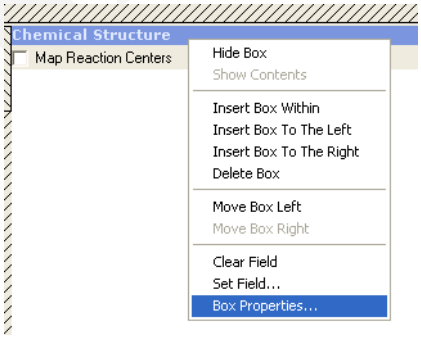
1. Right-click the frame of the box. The box menu appears.
2. Select **Box Properties**.
3. Click the **Show Max Button** checkbox so that a check mark appears:
4. Click **OK**. The dialog closes, and the max button appears.Showing and Hiding the Name of a Box

In a form, each box has a title bar associated with it. You may choose to either hide this bar or have it appear above the box in the form.

Hiding the Box Name

To hide the name of a box:

1. Right-click the frame of the box. The box menu appears.
2. Select **Box Properties**.



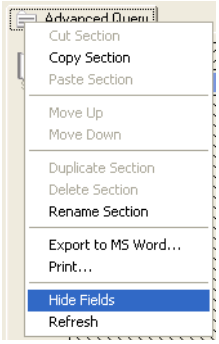
The Box Properties dialog appears.

3. Click the **Show Name** checkbox to clear it.
4. Click **OK**. The dialog closes, and the name of the box is no longer visible in the form.

Showing the Name of a Box

To show the name of a box:

1. Right-click the section menu tool on the tab, and select Hide Fields.



The fields in the form are hidden.

2. Right-click within the box whose name you wish to display in the form.The box menu appears.
3. Select **Box Properties.** The Box properties dialog appears.
4. Click the **Show Name** checkbox so that a check mark appears.
5. **Optional**: edit the name of the box.
6. Click **OK**. The dialog closes, and the box name appears in the upper left corner of the box.

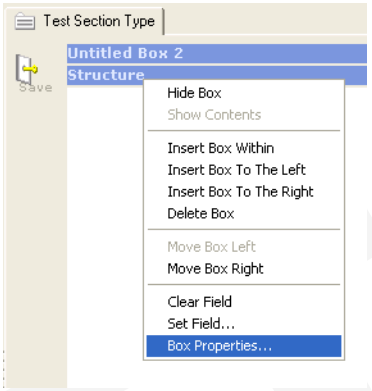
Resizing Boxes in a Form

You can change the size of a box to make it appear larger or smaller in a form. You can set the maximum dimensions, minimum dimensions, and proportional size of a box relative to other boxes in the same container.

Changing the Weight of a Box

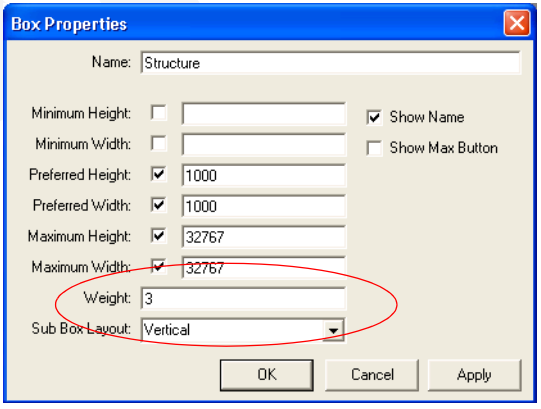
To change the size of a box relative to other boxes in the same container, change the weight of the box.

1. Right-click the frame of the box whose weight you wish to change. The box menu appears.
2. Select **Box Properties**.



The box properties dialog appears.

3. Change the value of the **Weight** parameter. In this example, we are changing the value to 3 (three times greater than the default box weight of 1).



4. Click **OK.** The dialog closes, and the box sizes change to reflect your change.

Changing the Dimensions of a Box Manually

1. Right-click the frame of the box whose size you wish to change. The box menu appears.
2. Select **Box Properties**. The Box Properties dialog appears.
3. Click the checkboxes to apply the options you desire to the box. The sizes of the

boxes will change according to the options you select.

- **Minimum Height and Minimum Width**– The minimum height and width, respectively, to which the box can shrink when the E-Notebook window is resized or the form is further configured in a way that would shrink the box (for example, by adding a box next to it).
- **Preferred Height and Preferred Width** – The starting height and width, respectively, of the box relative to other boxes in the same container. To calculate the actual height of a box within a container, begin with the preferred height of the contained boxes. Then:
  - if the preferred dimensions would leave extra space in the container box, add the extra space in the container to each contained box according to its Weight relative to the other boxes, ensuring that each box does not exceed its maximum dimensions.
  - if the preferred dimensions would cause the contained boxes to overflow the container, subtract space from each box according to its Weight relative to the other contained boxes, ensuring that each box is no smaller than its minimum dimension.
- **Maximum Height and Width** - The maximum height and width, respectively, a box can attain when the E-Notebook window is resized or as the form is further configured in a way that would increase the size of the box (for example, by deleting a box next it). A scroll bar appears within the box if the field within it requires more space than the maximum dimension allows.

Box dimensions are expressed in twips, with 20 twips equaling one pixel.

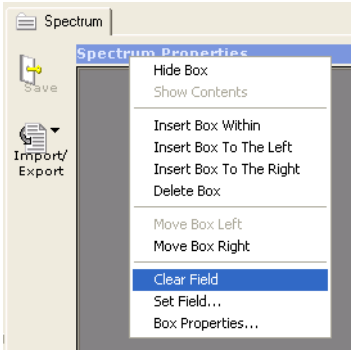
NOTE: If you would like a box to simply conform to the sizes of the boxes it contains, you can deselect all of the sizing options for that box.

Clearing Fields when Configuring a Form

When you are configuring a form, you may remove a field after adding it to the form. It is only possible to clear the field if the form is not yet in use. If the form is in use, the field will move to an empty box. (This prevents the possibility of obscuring data that a user has entered in a form).

To clear a field from a box:

1. Right-click the frame of the box. The box menu appears.
2. Select **Clear Field**.



The field is removed from the form.

Hiding Fields and Boxes when Configuring a Form

When you are configuring a form, hiding fields and boxes makes it easier for you to access box menus.

Hiding a Box

You may wish to hide a box if, for example, you wish to access the box that contains it in a form.

To hide a box:

1. Right-click the frame of the box. The box menu appears.
2. Select **Hide Box**.The Box is no longer visible in the form.
3. To access the box that contains the hidden box, right-click within the hidden box, and select **Box Properties**.The Box Properties dialog for the container of the hidden box appears.

Hiding Fields in a Form

You may wish to hide the fields in a form while you are configuring it, so that it is easier to access the box menus. This may become especially important if you have hidden the frames of the boxes.

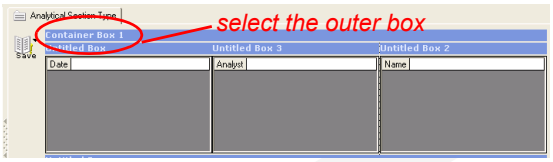
To hide the fields in a form:

1. Right-click the section menu icon that appears in the form.  The section menu appears.
2. Select **Hide Fields**. The fields in the form are hidden.
3. To see the field in a particular box again, right-click within the box, and select **Show Contents** from the context menu. This menu option will only appear if:
   a. the box contains a field or
   b. a contained box is hidden.

Changing Box Orientation

You may wish to change the orientation of a box so that contained boxes will stack either horizontally or vertically.

For example, starting with form with three, horizontally arranged boxes within a single container box, we will change them to a vertical arrangement.

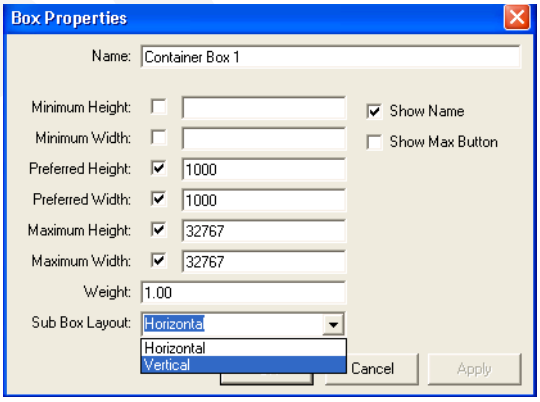


1. Right-click the frame of the box that contains the three boxes, making sure you select the correct box — the one that is directly outside of the three boxes.

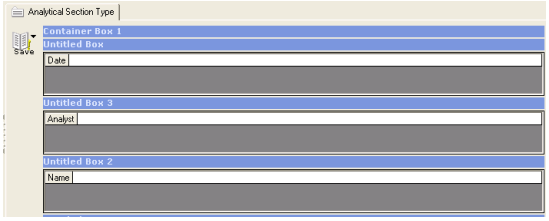
In this example, “Container Box 1” is selected.

The box menu appears. Select **Box Properties**.

The Box Properties dialog appears. Change the Sub Box Layout to **Vertical** (that is, the opposite of the current layout).



2. Click **OK**. The Box Properties dialog closes. The three boxes are now arranged vertically, as shown below.



Export Templates for Section Types

Export templates for section types allow users to print E-Notebook sections and export sections to Microsoft Word. You create export templates with MS Word sections, using tags to refer to E-Notebook fields.

An export template must be set up for each new section type you create.

To view the export template:

1. Right-click the section type in the Collection Tree. A menu appears.
2. Select **Show**>**Export Templates**. If the section type has an export template, the template appears in the right frame. If not, the right frame is blank, and you must create a new template.

See the following topics:

- Creating the Export Template for a Section Type
- Editing the Export Template for a Section Type

Creating the Export Template for a Section Type

Export templates allow users to print E-Notebook sections and to export sections to Microsoft Word.

To create an export template:

1. Right-click the section type in the Collection Tree. A menu appears.
2. Select **Show>Export Templates**. The right frame is blank if there is no export template associated with the section type. (For information about configuring an existing export template, see Editing the Export Template for a Section Type).
3. Click the New Default Section button 

in the right frame. A menu appears, listing all of the E-Notebook section types.
4. Select **Export Template**. A new export template appears.

See Editing the Export Template for a Section Type for instructions on setting up the template.

Editing the Export Template for a Section Type

To set up or modify an export template:

1. Right-click the section type in the Collection Tree. A menu appears.
2. Select **Show>Export Templates**. The export template appears in the right frame. If no template appears, you must first create the template.
3. You can then edit the template in one of two ways:
   - You can edit it within E-Notebook, using the MS Word tools that E-Notebook provides.
   - You can export it to MS Word and edit it within MS Word to make use of the full, MS Word feature set. You can then import it back into E-Notebook. See "MS Word Sections" on page 55 if you would like more information about how to import and export MS Word documents)

The body of each export template contains tags that mark the locations for the content within the exported section. The format of a tag consists of a left bracket, the name of a field, and a right bracket. For example, if there is a field named? Reaction? it will replace the first instance of ?<Reaction>? in the export template.

Each field type determines how it will replace the tag with its data (within the IENFieldCtl_Export method).

When a user prints a section, the printed header and footer are pulled from the *collection type* export template that corresponds to the user's region. See "Creating and Editing the Export Templates for a Collection Type" on page 158 for information about headers, footers, and setting up templates for users from different geographical regions.

Section Metadata Tags

Within the contents of the section type export template, the following tags can be inserted. Each of these tags will be replaced by the corresponding information at the time of export or printout.

Table 12

Tag	Replacement
<sectionName>	The name of the section
<sectionIndex>	The numerical position of the section within its containing set of sections.
<sectionCount>	The number of sections that are contained within the set of sections.

Standard Field Types

The following section describes how each of the standard add-in field types replaces the tags in an export document with the field type.

- **Active Document field type –** The Active Document field type replaces the export tag with the body of the Word document.
- **ChemDraw Structure field type –** The ChemDraw Structure field type substitutes a ChemDraw OLE object into the Microsoft Word document. As a result, the ChemDraw application is required to render the OLE object, either for display on the client machine, or for printing.
- **Collection Query field type –** The Collection Query field type replaces the export tag with tab-separated descriptions of the selected collection query options.
- **Collection Type Query field type** – The Collection Type Query field type replaces the export tag with tab-separated description of the collection type query.
- **Database Table field type –** Normally, the Database Table field type creates a Word table to replace the contents of the tag. Each column of the Database Table data corresponds to a column in the Word table; each row of the Database Table data corresponds to a row in the Word table. If the tag appears within a Word table, then, instead of creating a new Word table, the Word table that contains the tag is used to contain the Database Table data. Any formatting within the Word table is applied to the content.
- **Property List field type –** In the export template, the tag for the Property List field type should appear in an MS Word table; then, the Word table that contains the tag is used to contain the data. The first column of the table contains the names of the properties, and the second column contains the values of the properties. Any formatting within the Word table is applied to the content.
- **Property Query field type –** Normally, the Property List field type creates a Word table to replace the contents of the tag. creates a Word table to replace the contents of the tag. The first column of the data corre-

sponds to the property name, and the second column corresponds to the value. a column in the Word table; each row of the data corresponds to a row in the Word table. If the tag appears within a Word table, then, instead of creating a new Word table, the Word table that contains the tag is used to contain the data. Any formatting within the Word table is applied to the content.

- **Query Text field type –** The Query Text field type replaces the tag with the text stored in the section.
- **Search Location field type** –The field marker within the template is either deleted (if the "Search In" check box is unchecked) or replaced by the name of the selected collection (if the "Search In" check box is checked
- **Spectrum field type –** The Spectrum field type substitutes an image of the spectrum for the tag.
- **State Query field type –** The Collection Type Query field type replaces the export tag with tab-separated description of the collection type query.
- **Stored Document field type –** The Stored Document field type replaces the export tag with tab-separated description of the stored document: its type and its size in bytes.
- **Styled Text field type** – The Styled Text field type replaces the tag with the formatted text stored in the section.
- **Subsection field type –** The Subsection field type replaces the tag with the contents of a Word document that is created by exporting all of the sections contained in the subsection.
- **Table field type –** Normally, the Table field type creates a Word table to replace the contents of the tag. Each column of the Table data corresponds to a column in the Word table; each row of the Table data corresponds to a row in the Word table. If the tag appears within a Word table, then, instead of creating a new Word table, the Word table that contains the tag is used to contain the Table data. Any formatting within the Word table is applied to the content.
- **Table Query field type –** creates a Word table to replace the contents of the tag. Each column of the data corresponds to a column in the Word table; each row of the data corresponds to a row in the Word table. If the tag appears within a Word table, then, instead of creating a new Word table, the Word table that contains the tag is used to contain the data. Any formatting within the Word table is applied to the content.
- **URL Display field type –** The URL Display field type replaces the export tag with the contents of the web page specified in the section.

Page Breaks

By default, if a user prints a range of sections in a collection, the sections will print contiguously, without page breaks. You may however, insert a page break at the end of the section type export template if you do not want sections to print on the same page. To add a page break before a section, check the "Page Break Before" paragraph setting for the first paragraph of the corresponding export template. This is an MS Word setting. If this paragraph setting is not checked, then the sections will appear continuously on the Word page.

12

Managing Collection Types

Information in E-Notebook is organized into collections, which are the items that appear in the collection tree. When a user creates a collection, the properties and content of the collection are determined by the collection type, which you configure as an administrator.

You may configure a collection type such that any of the following are associated with it:

Section Types – collection types may be configured so that they contain section types, which are the E-Notebook data forms. A page or experiment is an example of a collection type that contains section types. Alternatively, a collection type — for example, a folder — may not have section types associated with it, but may simply contain other collection types.

Contained Collection Types – A contained collection is a collection that may exist within a particular collection in the collection tree. For example, a user group may contain users; user is a contained collection type within the user group collection type. Or, notebooks may contain experiments; experiment is a contained collection type within the notebook collection type.

Contained Reference Types – A contained reference is a shortcut that allows E-Notebook users to view a collection from elsewhere in the collection tree. Any changes made to the original are reflected in the reference.

States – a state is a condition that defines certain properties of a collection, such as whether the collection may be edited. Multiple states may be used to define the life cycle of a collection. You may configure change control options based on state.

Search Engines – A search engine allows users to search for information in E-Notebook. For example, the collection search engine makes it possible to search for collections that match certain metadata criteria, such as creation date and owner.

Collection Listeners – collection listeners modify behaviors of collections, such as the move or create behaviors. An example is the User Collection Listener, which displays a dialog for entry of UserID , user name, etc., when a new user is created.

Form Tools – form tools perform a certain function when a user selects them — for example, creating a new collection or a new section.

See the following topics for more information:

- Creating a New Collection Type
- Adding a Section Type to a Collection Type
- Managing Contained Collection Types
- Managing Contained Reference Types
- Managing Collection Listeners
- Managing Collection Type Form Tools

- Managing States and Transitions
- Configuring Change Control Options
- Managing Templates
- Managing Export Templates of Collection Types

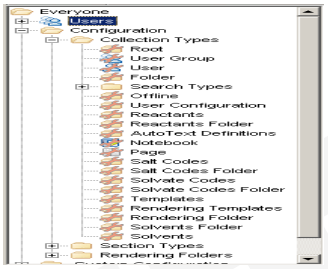
Creating a New Collection Type

Collections organize related information in E-Notebook, and each collection appears as an item in the Collection Tree. When you create a new collection type, you create a new means of organizing information in E-Notebook. For example, you could create a collection type of Project or Experiment. E-Notebook Users would then be able to use these Projects or Experiments to organize their information in E-Notebook.

When you create a new collection type, you define the rules that determine which sections users can add to collections of this type. Also, you set up the rules that govern how the collection type is related to other collection types in the Collection Tree: where can a new collection of this type be created, and what types of collections can be created within it? You can set up the rules that are modeled after your workflow.

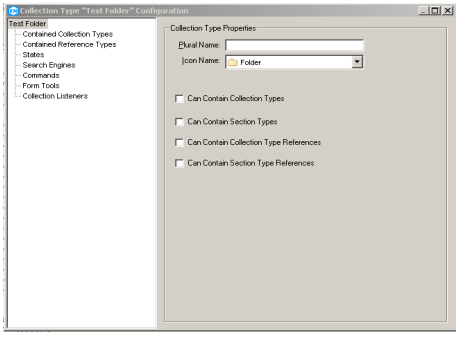
To create a new collection type:

1. Right-click a blank area of the Collection Tree. A menu appears.
2. Select **Browse All**. The entire Collection Tree appears, showing the Configuration Folder.



TIP: The Configuration Folder will appear at the top of the Collection Tree if you right-click the Configuration Folder and select **Browse Here**.

3. Right-click the Collection Types folder and select **New>Collection Type**. A new Collection Type appears within the Collection Types folder, and you are prompted to rename it.
4. Enter a name for the Collection Type.
5. Right-click the new Collection Type and select **Collection Type Configuration**. The Collection Type Configuration dialog appears.



6. Specify the following information:

- **Plural Name** – the name applied to multiple collections of this type.
- **Icon Name** – the icon to be associated with the collection type in the Collection Tree.

7. If you would like the collection type to be used as an organizational tool for administrators, you may select any of the following options. Normally these options are not selected for new collection types. In the default E-Notebook setup, only Folders, such as the Collection Types folder, may contain collection types and section types.
   - **Can Contain Collection Types –** a check mark indicating whether administrators may add collection types to this collection type.
   - **Can Contain Section Types** – a checkbox indicating whether administrators may add section types to this collection type.
   - **Can Contain Collection Type References** – a checkbox indicating whether new administrators may add references (shortcuts) to collection types to this collection type.
   - **Can Contain Section Types** – a checkbox indicating whether administrators may add references (shortcuts) to section types to this collection type.

Once you have created the collection type, you will want to configure it. See the related topics for instructions.

Adding a Section Type to a Collection Type

By adding sections types to a collection type, you determine which sections an E-Notebook user can add to that collection type in E-Notebook. For example, and Experiment/Page may have several section types associated with it, including reaction sections or MS Word sections. When a user creates an Experiment/Page, he may add any of these sections to the Experiment/Page.

To add a section type to a collection type:

1. Right-click a blank area of the Collection Tree. A menu appears.
2. Select **Browse All**. The entire Collection Tree appears, showing the Configuration Folder.
3. Click the collection type to which you wish to add the section type.
4. Click the New Section menu icon in the right frame. The section menu appears.
5. Click the section type you wish to add. The section type is added to the collection type. When a user creates the collection in E-Notebook, he will be able to add this section to it.

Having a Section Appear by Chronographical Default

If you would like a section to appear automatically when a user creates the collection:

1. Right-click the section menu icon again.

2. Select **New**, then select the section type.

   A section appears in the right frame. You can add data to the section, or change the appearance of the section, as required. The alterations you make will appear only when an E-Notebook user creates this particular type of Collection.

Preventing Users from Creating Additional Sections of a Particular Type

In some cases, you may want a particular section to appear by default when a collection is

created, and you may not want users to be able to create additional sections of that type. For example, there may be a Title section of a Notebook. Since it would not make sense for users to add multiple Title sections to the Notebook, you may prevent them from doing so. To do this:

1. Right-click the section menu icon in the right frame. 

   The section menu appears.
2. Right-click the section menu icon, select **New**, then select the section type from the menu that appears.

   The section appears in the right frame.
3. Right-click the section menu icon, and select **Section Types** from the menu.

   The Section Types dialog appears.
4. In the right pane of the dialog, click the section type, and then click the **Remove** button.
5. Click **Close**.

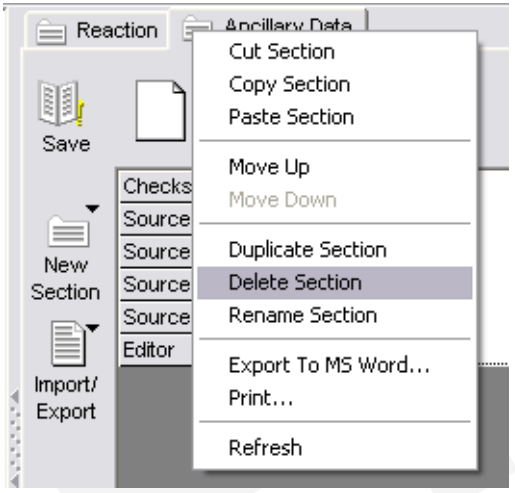
   Users will be prevented from adding new sections of this type to this collection type.

Removing a Section Type from a Collection Type

If you no longer wish to include a particular section type in a collection type, you can remove the section type.

To do this:

1. In the Collection Tree, click the collection type from which you wish to remove the section type.
2. Right-click the section menu icon at the top of the right frame.  .The section menu appears.
3. Select **Delete**.



The section type is removed from the collection type.

NOTE: If you have added the section to the collection type so that the section will appear automatically in E-Notebook when a user creates the collection, you must delete the existing section from the collection type.

Contained Collection Types

Contained collection types are collections that may exist within a particular collection in the Collection Tree. For example, a user group may contain users; user is a contained collection type within the user group collection type. Or, notebooks may contain experiments; experiment is a contained collection type within the notebook collection type.

This topic covers adding and removing contained collection types, and changing the relationship between a contained collection type and the parent collection type.

Adding a Contained Collection Type

To add a contained collection type to a collection type.

1. In the Collection Tree, right-click the collection type that is to be the parent collection and select **Collection Type Configuration**. In this example, user group is the parent collection type, and we are adding the ability to create folders — the contained collection type — within user groups. The Collection Type Configuration dialog appears.
2. Right-click **Contained Collection and Page Types** and select **New Contained Collection or Page Type**. A dialog box appears, listing the collection types in E-Notebook (and their corresponding templates).
3. Click the collection type you wish to add, then click the **Add** button.The new contained collection type appears in the left pane. In the right pane, the features of the contained collection type within the parent (or container) collection are displayed. For example, if the contained Collection is the child within the parent collection:
   - New children can be added to parents.
   - Copies of existing children can be added to parents.
   - Children can be deleted from parents.
   - Children can be moved into parents.
   - Children can be removed from parents and moved into different collections.
4. Click the checkboxes to select the features you wish to apply to the contained collection type.

Changing the Relationships between a Contained Collection Type and the Parent Collection Type

To change the relationship between a contained collection type and its parent collection type:

1. In the collection tree, right-click the parent collection type and select **Collection Type Configuration**. The collection type configuration dialog appears.
2. Click the plus sign to expand the contained collection types.
3. Click the contained collection type for which you wish to change the relationship.The relationship features appear to the right.
4. Select or deselect the features as desired.
5. Click the **Close** button in the upper right corner to close the Collection Type Configuration dialog.

Removing a Contained Collection Type from a Collection Type

To remove a contained collection type:

1. In the Collection Tree, right-click the the parent collection type and select **Collection Type Configuration**.The collection type configuration dialog appears.
2. Click the plus sign to expand the contained collection types.
3. Right-click contained collection type you wish to remove, and select **Delete Relationship** from the menu that appears.A message appears, asking you to confirm that you wish to delete the relationship.

4. Click **Yes**. The contained collection type is deleted.

NOTE: This change will not affect the relationships that users have already created. It will only apply going forward.

Contained Reference Types

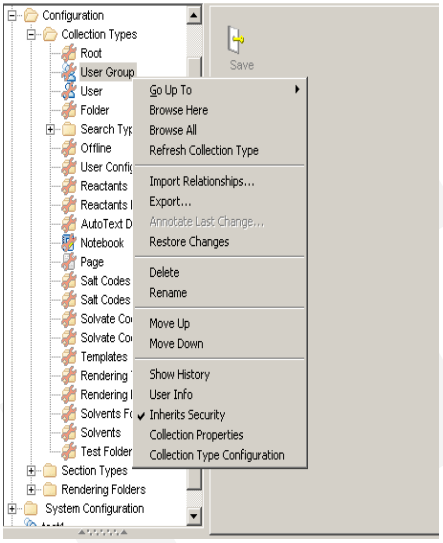
You can set up a collection type to permit users to add references to other collection types. A contained reference type differs from a contained collection type, because a reference is a shortcut that allows an E-Notebook user to view an original from elsewhere in the Collection Tree. Any changes made to the original are reflected in the reference.

This topic covers adding and removing contained reference types, and changing the relationship between a contained reference type and the parent collection type.

Adding a Contained Reference Type

To add a contained reference type to a collection type.

1. In the Collection Tree, right-click the collection type that is to be the parent collection type and select **Collection Type Configuration**. In this example, user group is the parent collection type, and we are adding the ability to create references to folders — the contained reference type — within user groups.



The Collection Type Configuration dialog appears.

2. To expand the collection type to which you wish to add a contained reference type, either double-click it or click the plus sign next to it.
3. Right-click **Contained Reference Types** and select **New Contained Reference Type**. A dialog box appears, listing the collection types in E-Notebook (and their corresponding Templates).
4. Click the collection type you wish to add as a contained reference type, and click the **Add** button. The new contained reference type appears in the left pane. In the right pane, the features of the contained reference type within the parent collection are displayed.
5. Click the checkboxes to select the features you wish to apply to the contained reference type.

Changing the Relationship between a Contained Reference Type and the Parent Collection Type

To change the relationship between a contained reference type and its parent collection type:

1. In the Collection Tree, right-click the parent collection type and select **Collection Type Configuration**. The Collection Type Configuration dialog appears.
2. Click the plus sign to expand the contained reference types.
3. Click the contained reference type for which you wish to change the relationship. The relationship features appear to the right.
4. Select or deselect the features as desired.
5. Click the **Close** button in the upper right corner to close the Collection Type Configuration dialog.

Removing a Contained Reference Type from a Collection Type

To remove a contained reference type:

1. In the Collection Tree, right-click the parent collection type and select **Collection Type Configuration**. The Collection Type Configuration dialog appears.
2. Click the plus sign to expand the contained reference types.
3. Right-click contained reference type you wish to remove, and select **Delete Relationship** from the menu that appears. A message appears, asking you to confirm that you wish to delete the relationship.
4. Click **Yes**. The contained reference type is deleted.

NOTE: This change will not affect the relationships that users have already created. It will only apply going forward

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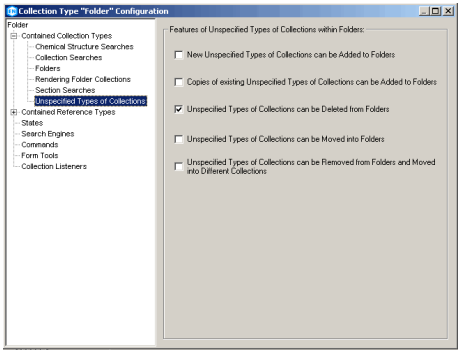
Configuring Relationships to Unspecified Types of Collections

E-Notebook has an "Unspecified Types of Collections" feature that you can use to configure the relationship between a container collection type and any collection type for which no relationship is explicitly defined. For example, if you add "Unspecified Types of Collections" as a contained collection type within a Folder collection type, the relationship you define will apply to all of the E-Notebook collection types, excluding collection types for which an individual relationship is set up.

In the example below, users will be able to add or delete any type of collection from a Folder. The features of Reactant collections within Folders may be different, however, because this relationship is defined separately.



"Unspecified Types of Collections" and "Unspecified Types of Template" appear in the

list of collection types when you add a new contained collection type or contained reference type.

See the following topics for information about adding contained collection types and contained reference types:

- Managing Contained Collection Types
- Managing Contained Reference Types

Collection Listeners

Collection listeners modify the behaviors of collections — such as the creating, hiding, renaming, duplicating, and moving behaviors. E-Notebook provides several, standard collection listeners that you may associate with collection types.

See the following topics for more information:

Adding a Collection Listener to a Collection Type

Viewing and Editing the Properties of a Collection Listener

Removing a Collection Listener from a Collection Type

The Standard Collection Listeners

You may also develop your own, customized collection listeners to perform additional functions.

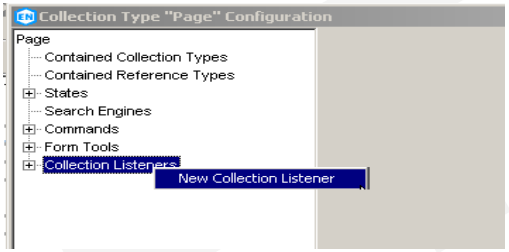
Adding a Collection Listener to a Collection Type

You can associate a collection listener with a collection type if you would like a particular function to occur when a user takes an action on a collection. For example, if you create a new user and the user collection listener is associated with the user collection type, a dialog will appear prompting you to enter a LogInID and other pertinent information.

See"The Standard Collection Listeners" on page 137 for information about the various collection listeners that E-Notebook provides.

To add a collection listener to a collection type:

1. Right-click the collection type in the Collection Tree, and select **Collection Type Configuration** from the menu that appears.

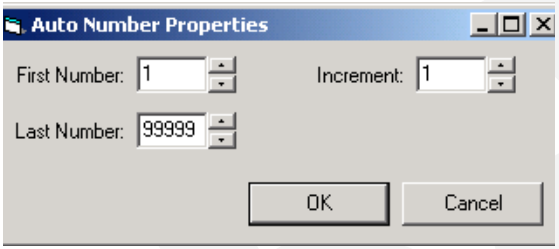


2. Right-Click **Collection Listeners** and select **New Collection Listener** from the menu that appears.A new collection listener appears and you are prompted to rename it.
3. Type in a name for the collection listener.
4. Enter the **IENCollectionListener ProgID** for the Listener you wish to add. (This is the programmatic identifier that the Windows registry uses to uniquely identify the object that implements the corresponding interface. The format is OleServerName.ObjectName). The collection listener is associated with the collection type.
5. To close the Collection Type Configuration dialog, click the close button  in the upper right corner. The dialog closes.

Viewing and Editing the Properties of a Collection Listener

You can view and edit the custom properties that you may be associated with a collection listener. To do this:

1. Right-click the collection type that contains the listener in the Collection Tree, and select **Collection Type Configuration** from the menu that appears. The Collection Type Configuration dialog appears.
2. Click the collection listener whose properties you wish to view or edit. If necessary, click the plus sign next to Collection Listeners to view the collection listeners that are associated with this collection type.
3. Click the **Custom Properties** button. The collection listener properties dialog appears. This example shows the properties dialog for the Auto Number Listener, which is one of the standard E-Notebook collection listeners.



TIP: If the collection listener has no custom properties associated with it, a message to that effect will appear when you click the Custom Properties button.

4. Edit the properties as required.
5. Click **OK** to close the properties dialog.
6. To close the Collection Type Configuration dialog, click the close button in the upper right corner. The dialog closes and your changes are saved.

Removing a Collection Listener from a Collection Type

If you no longer want a particular collection listener to be associated with a collection type, you can remove it from the collection type. To do this:

1. Right-click the collection type that contains the listener in the Collection Tree, and select **Collection Type Configuration** from the menu that appears. The Collection Type Configuration dialog appears.
2. If necessary, click the plus sign next to **Collection Listeners** to view the collection listeners that are associated with this collection type.
3. Right-click the collection listener you wish to remove from the collection type. A menu appears.
4. Select **Delete Collection Listener**. A message appears, asking you to confirm that you wish to delete the collection listener.
5. Click **Yes**. The collection listener is removed from the collection type.
6. To close the Collection Type Configuration dialog, click the close button  in the upper right corner. The dialog closes.

The Standard Collection Listeners

E-Notebook provides several standard collection listeners that you may associate with collection types. Collection listeners are used to modify the behaviors of collections — such as the creating, hiding, renaming, duplicating and moving behaviors.

See the following topics for more information:

- Auto Number Collection Listener - this listener allows you to specify a customized numbering scheme for a collection type.

- Parent Prefix Collection Listener - ensures that when the collection is renamed, any contained collection that has a name generated by the Auto Number listener has the correct prefix if the name of the parent collection changes.
- Audit Collection Listener - prevents the user from deleting a collection if the collection has been modified since it was created.
- Fixed Name Collection Listener - prevents the user from renaming collections.
- User Collection Listener - when a User is created, this listener displays a dialog box for key information that must be entered, such as login ID.
- Change Display Collection Listener - enables Visual Display of Changes when a user creates a particular type of collection.
- Prevent Reference Copy - prevents users from copying collections that contain references to specific types of collections that are in specific states.
- Owner Full Control - provides the user with Full Control permission for this type of collection when he/she is the owner.
- Prevent Delete when Referenced - prevents users from deleting this type of collection when it is referenced from another collection.

The Audit Collection Listener

The Audit Collection Listener is used to prevent users from deleting a collection if the collection has been modified since it was created. If this listener is associated with a collection type, then the delete command will be disabled if the collection has been modified.

Listener	Listener ProgID
Audit Collection	ENStandard11.AuditCollectionListener

This collection listener has no custom properties associated with it.

The Auto Number Collection Listener

The Auto Number Listener is used to automatically name newly created collections by appending a serial number to the name of the collection that contains the newly created collection.

For example, if a Notebook collection contains experiments and the notebook is named NB-001, the Auto Number Collection Listener can be associated with the Experiment collection type to automatically number experiments within the collection (for example, NB-001-001).

Listener	Listener ProgID
Auto Number	ENStandard11.AutoNumberListener

The Auto Number Listener has three custom properties: minimum, increment, and maximum. The minimum is used to specify the serial number of the first newly created collection. The increment is used to specify the increment between newly created collections. The maximum is used to limit the number of collections that can be contained.

When renaming a collection whose name was generated with the Auto Number Collection Listener, the collection will check to ensure

that the name fits within the parameters described by the Auto Number Listener properties. The name must begin with the name of the parent collection followed by a dash and a serial number.

The Change Display Collection Listener

The Change Display Collection Listener is used to enable Visual Display of Changes when a user creates a particular type of collection. (See "Visual Display of Changes" on page 155).

The Change Display Collection Listener is used to enable Visual Display of Changes from collection creation onward. Note that there is also a transition listener that enables Visual Display of Changes when a particular transition is performed on a collection. See "The Change Display Transition Listener" on page 151 for more information.

Listener	Listener ProgID
Change Display	ENStandard11.ChangeDisplayListener

The Change Display Collection Listener has no custom properties associated with it.

The Clear Value Collection Listener

The Clear Value Collection Listener is associated with a collection type containing sections with tables/property fields. This listener can be used to clear specified properties in tables or property list fields when a collection is duplicated.

For example, you may wish to clear the table section of a collection when a user duplicates that section.

Listener	Listener ProgID
Clear Value	ENStandard11.ClearValueCListener

With the Custom Properties of the listener, you specify the section type, the field, and the property whose values are to be cleared. The top dropdown list displays the Target Section Type in the collection type. The middle dropdown list displays the Target Fields in the selected section type. The bottom dropdown list displays all of the Target properties in the field you have selected.

The Database Procedure Collection Listener

The Database Procedure Collection Listener is used to execute a database procedure during an operation on a collection.

For example, you may wish to clear the table section of a collection when a user duplicates that section.

Listener	Listener ProgID
Database Procedure	ENStandard11.DBProcCollectionListener

With the Custom Properties of the listener, you specify the name of the procedure and when it should be called: for example, after create, before, create, etc.

The Fixed Name Collection Listener

The Fixed Name Listener is used to prevent the user from renaming collections. If the Fixed

Name Listener is associated with a collection type, then the Rename command in the collection menu is made inactive when collections of that type are selected.

Listener	Listener ProgID
Fixed Name	ENStandard11.FixedNameListener

The Fixed Name Collection Listener has no custom properties associated with it.

The Owner Full Control Collection Listener

The Owner Full Control collection listener provides the user with Full Control permission for this type of collection when he/she is the owner. For example, if this listener is associated with the notebook collection type, then the user who creates a notebook will automatically be able to assign and remove access permissions for the notebook.

Listener	Listener ProgID
Owner Full Control	ENStandard11.OwnerFullControlCListener

This Collection Listener has no custom properties associated with it.

The Parent Prefix Collection Listener

The Parent Prefix listener is used to ensure that when a user renames a collection, any contained collection that has a name generated by the Auto Number Listener is renamed with the new prefix.

For example, consider a Notebook collection that contains Experiments. The Auto Number listener is associated with the Experiment collection type and the Parent Prefix listener is associated with the Notebook collection Type. If a notebook name is changed from “NB” to “Notebook”, then the Parent Prefix listener renames the contained experiments so that they begin with “Notebook”.

Listener	Listener ProgID
Parent Prefix	ENStandard11.ParentPrefixListener

This collection listener has no custom properties associated with it.

The Prevent Delete when Referenced Collection Listener

The Prevent Delete when Referenced Collection Listener prevents users from deleting a collection if the collection is referenced from another collection in E-Notebook. The reference may occur in a property list or a table.

You associate the listener with the collection type that should not be deleted when it is referenced. For example, if you want to prevent users from deleting an Experiment/Page collection when that Experiment Page is referenced, you would associate the listener with the Experiment/Page collection type.

Listener	Listener ProgID
Prevent Delete when Referenced	ENStandard11.NoDeleteRefCListener

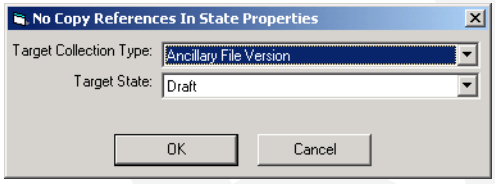
The Prevent Delete when Referenced Collection Listener has no custom properties associated with it.

The Prevent Reference Copy Collection Listener

The Prevent Reference Copy collection listener prevents users from copying collections that contain references to specific types of collections that are in specific states. For example, if this listener is associated with an experiment/page collection type, it may be configured to prevent users from copying pages/experiments that contain references to folders that are in a Closed state.

Listener	Listener ProgID
Prevent Reference Copy	ENStandard11.NoCopyRefStateCListener

Select the custom properties as shown below:



- **Target Collection Type** – the collection type that is referenced.
- **Target State** – the state of the target collection that would prevent a user from copying a collection that has this listener associated with it.

The Refresh Database Table Privilege Change Collection Listener

The Refresh Database Table Privilege Change listener is used to refresh the contents of a database table when the privileges associated with a collection change. The listener has properties that describe the field that is refreshed when a privilege is added or removed from a collection.

Listener	Listener ProgID
Refresh Database Table Privilege Change	ENStandard11.RefreshDBTablePCListener

With the Custom Properties of the listener, you specify the target section type and target field. The Target Section Type popup list contains a list of all of the section types the currently logged in user can read. The Target collection type should be set to the section type that contains the field to be refreshed. The Target Field popup list contains a list of all of the database table fields in the Target section type. The Target field should be set to the field which displays the data that is changed when the privileges change.

The Section List Collection Listener

When the Section List Collection Listener is associated with a collection type, a list of the sections in each collection of that type is cached on the E-Notebook client. This makes it possible for E-Notebook add-ins and field controls to use the list. For example, in the default configuration, the Section List Collection Listener is associated with the Acronym collection type. A list of the sections in an Acronym collection is cached on the client, and the reaction toolbar accesses this list and displays it in the Quick Add dropdown.

Listener	Listener ProgID
Section List	ENStandard11.SectionListCListener

This collection listener has no custom properties associated with it.

The Security Collection Listener

The Security Collection Listener allows you to assign security privileges to a collection when it is created. For example, you may define a collection type that allows users to record their ideas and concepts. For IP reasons, you may want this type of collection to be visible only to the owner and, for example, a legal group in the company. This listener allows you to limit access to certain groups and individuals automatically, when the collection is created.

The owner of the collection is given Full Control privilege by default.

Listener	Listener ProgID
Security	ENStandard11.SecurityCListener

With the Custom Properties of the listener, you specify individual users and groups who will be able to access collections of this type.

The Sequence Collection Listener

The Sequence Collection Listener names a new collection based on a global sequence that you specify.

Listener	Listener ProgID
Sequence	ENStandard11.SequenceNumberCListener

With the Custom Properties of the listener, you specify the prefix, format, suffix, and database sequence names.

The Unduplicatable Collection Listener

If the Unduplicatable Collection Listener is associated with a collection type, contents of that type will not be copied when a user copies the selected collection. For example, there may be a Page/Experiment collection. If the Unduplicatable Collection Listener is associated with the Page/Experiment collection type, these experiments will not be copied when a user copies the Experiment collection.

Listener	Listener ProgID
Unduplicatable Collection	ENStandard11.UnduplicatableCListener

This collection listener has no custom properties associated with it.

The Unique Child Collection Listener

The Unique Child Collection Listener ensures the uniqueness of a collection of this type within its container collection. For example, if you associate the listener with the User Configuration collection type, and then specify User as the container collection, it will only be possible to create a single User Configuration within each user collection.

Listener	Listener ProgID
Unique Child	ENStandard11.UniqueChildOfTypeCListener

With the Custom Properties of the listener, you specify the container collection.

Templates

Templates make it possible for E-Notebook users to avoid reentering information unneces-

sarily. For example, a user may create a template for a particular experiment/page. It may contain data and notes that he often uses, or typical values for various properties. The user can use the template as the basis for new experiments/page collections.

Each time a collection type is created in E-Notebook , a template of that type is created automatically. As an administrator, you configure the rules that determine which types of templates an E-Notebook user can create, and which collection types can contain or reference the templates. You set up these rules the same way you would set them up for any, other collection type: by adding templates to collection types as contained collection or reference types.

The template collection type should be added as a contained collection type to a collection type that is *not* the container into which users will drag the templates to create new collections. For example, if Notebooks contain Experiments, the Experiment Template collection type should be added as a contained collection type within, for example, a **Folder** or a **User**. If **Experiment Template** is a contained collection type within **Notebook**, then a user will simply create a new template when he drags a template into a Notebook.

See the following topics for information about adding templates to your E-Notebook configuration:

Contained Collection Types

Contained Reference Types

Collection Type Form Tools

There are several form tools that may only be associated with collection types, for example, the New Child Collection Form Tool. These form tools are described here. E-Notebook also provides a number of standard form tools that you may only associate with section types. See "Standard Form Tools" on page 113 for more information.

See the following topics for more information about the functions and attributes of the collection type form tools:

- The New Section Form Tool – allows a user to associate a new section with a collection.
- The Print Multiple Form Tool – allows a user to print multiple collections with a single action.
- The New Child Collection Form Tool – creates a new collection within the selected collection. For example, the tool may be used to created a new page within a notebook.
- The New Sibling Collection Form Tool – allows a user to create a new collection of the same type.
- The Duplicate Collection Form Tool – allows a user to create a copy of the collection.

The New Child Collection Form Tool

The New Child Collection Form Tool allows users to add new contained collections to the selected collection. For example, a user could click this form tool on a notebook in order to create a new page/experiment within the notebook.

Form Tool	Form Tool Control ProgID
New Child Collection	ENStandardCtl11.NewChildCFormTool

The New Sibling Collection Form Tool

The New Sibling Collection Form Tool allows users to create a new collection of the same type. For example, if a user clicks the New Sibling Form Tool on a notebook, a new notebook will be created. The new sibling will appear within the same container collection in the Collection Tree.

Form Tool	Form Tool Control ProgID
New Sibling Collection	ENStandardCtl11.NewSiblingCFormTool

The Duplicate Collection Form Tool

The Duplicate Collection Form Tool allows users to create a copy of the selected collection. For example, if a user clicks the Duplicate Collection Form Tool on a Page/Experiment collection, the Page/Experiment collection will be copied. The new copy will appear within the same container collection in the Collection Tree.

Form Tool	Form Tool Control ProgID
Duplicate Collection	ENStandardCtl11.DuplicateCFormTool

Search Types

Search types allow users to search for information in E-Notebook. Users can run searches, and then save their queries and results in the Collection Tree.

In E-Notebook, search types are simply collection types that have search engines and search forms associated with them. E-Notebook provides several, standard search engines. You may also develop your own, custom search engines. For example, you could use the tool to perform various types of calculations and put the results into a manageable format within an E-Notebook collection.

You can configure your own search forms to contain the fields you require.

See the following topics for more information:

- Creating a Search Type
- Standard Search Engines
- Creating a Search Form

Viewing and Editing the Properties of a Search Engine

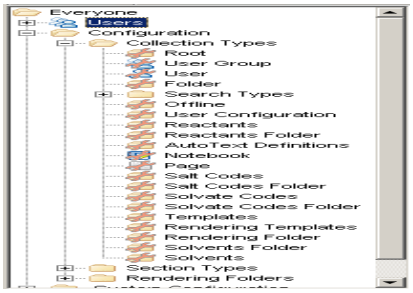
Creating a Search Type

You can define your own search types for finding and managing E-Notebook information that is important to your users. In E-Notebook, search types are simply collection types that have search engines and search forms associated with them.

To create a search type:

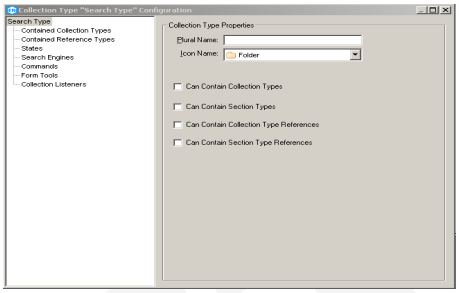
1. Right-click a blank area of the Collection Tree. A menu appears.

2. Select **Browse All**. The entire Collection tree appears, showing the Configuration Folder.



TIP: To have the Configuration Folder appear at the top of the Collection tree, right-click the Configuration Folder and select **Browse Here**.

3. Right-click the Search Types folder (or another folder) and select **New>Collection Type**. A new collection type appears in the Collection Tree, and you are prompted to rename it.
4. Enter a name for the collection type.
5. Right-click the new search type, and select **Collection Type Configuration** from the menu that appears. The Collection Type Configuration dialog appears.
6. Specify the following information:
   - **Plural Name** - enter the name applied to multiple collections of this type.
   - **Icon Name** - select **Search** as the icon to be associated with the search type in the Collection tree.



7. Right-click **Search Engines**, and select **New Search Engine** from the menu that appears. A new search engine appears and you are prompted to rename it. Its attributes appear to the right. The name that you enter for the search engine is the name that will appear in the "Search For:" dropdown list when an E-Notebook user is in Search mode.
8. Enter the following information.
   - IENSearchEngineProgID
   - IENResultsCtlProgID
   - IENResultsCtl License Key

   See Standard Search Engines for more information about the standard E-Notebook Search Engines.

Once you have created the search type, you configure it as you would any, other collection type. The section type you associate with it should be a search form. See"Creating a Search Form" on page 146.

Standard Search Engines

E-Notebook provides several standard search engines:

Collection Search Engine

The Collection Search Engine is used to perform searches for collections and match criteria specified in the following fields:

- Collection Query field (see “Collection Query Fields” on page 186).
- Collection Type Query field (see “Collection Type Query Fields” on page 186).
- State Query Field (see “State Query Fields” on page 187).
- Search Location (see “Search Location Fields” on page 188).

Search Engine	Search Engine ProgID	Search Engine Control ProgID
Collection	ENSearchEngine11.CollectionSearchEngine	ENSearchEngine11.CollectionResultsResultsCtl

Section Search Engine

The Section Search Engine is used to perform searches for sections and match criteria specified in the a variety of field types:

- Property Query (see “Property Query Fields” on page 187).
- Table Query (see “Table Query Fields” on page 188).
- Query Text (see “Query Text Fields” on page 186).
- Chemical Query (see “Chemical Query Fields” on page 185).

In addition, any of the field types listed for the Collection Search Engine, above, may be used.

Chemical Structure Search Engine

The Chemical Structure Search Engine is used to perform searches for chemical structures. The results are organized by substructure. For each chemical structure that matches a specified query, a set of references is created that contain that chemical structure.

- See“Chemical Query Fields” on page 185.

Search Engine	ProgID	Search Engine Control ProgID
Chemical Structure	ENChemSearch11.ChemSearchEngine	ENChemSearch11.ChemSearchResults Ctl

Creating a Search Form

A search form is simply a section type that contains search fields. The search fields make it possible for users to search for the following information within E-Notebook. For information about each of the search fields and its usage, please see “Search Fields” on page 185.

When you configure a search form, the information that a user can search for is determined by:

1. the search fields in the form and
2. the search engine associated with the search type.

To create a new search form,

1. In the Collection Tree, right-click the folder or collection into which you are adding the search form.The collection menu appears.
2. Select **New>Section Type**.A new section type appears in the Collection Tree; its blank form appears to the right. You are prompted to enter a name for the section type.
3. Type in a name for the section type.
4. Right-click the new section type in the Collection Tree and select **Section Type Config-**

uration from the menu that appears. The Section Type Configuration dialog appears. This is the dialog through which you add and configure the components that make up the Form

- Fields
- Form Tools
- Section Listeners

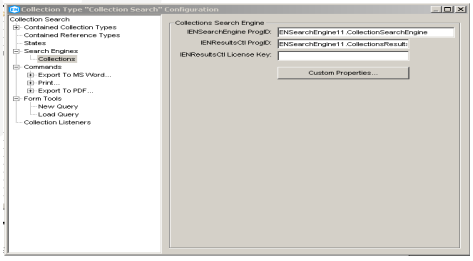
When you add Fields to the Section Type, you must add search fields.

For information about how to configure the section type.

Viewing and Editing the Properties of a Search Engine

In some cases, a search engine may have custom properties associated with it. You can view and/or edit the properties that are associated with a search engine.

1. Right-click the search type in the Collection Tree, and select **Collection Type Configuration** from the menu that appears. The Collection Type Configuration dialog appears.
2. Double-click **Search Engines** to expand the category.
3. Click the search engine. Its ProgID's appear to the right.



4. Click the **Custom Properties** button. If the search engine has custom properties associated with it, the properties dialog is displayed. You may edit the properties at this point. If the search engine has no custom properties, a dialog box appears, stating that the search engine has no properties associated with it.

NOTE: None of the standard, E-Notebook search engines have custom properties associated with them.

States and Transitions

You can associate states with a collection type to define properties of a collection at certain phases or points in its lifecycle. Transitions are the actions a user takes to move collections from one state to another. For example, a page/experiment may have several states — each of which has different annotation rules associated with it.

Transition listeners perform certain functions as the collection moves from one state to another. For example, a user may be prompted to enter values for certain fields, or a visual display of the changes a user makes to a collection may be enabled.

See the following topics for more information:

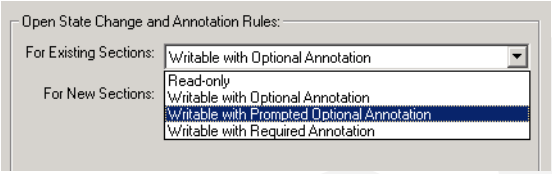
- Adding States to a Collection Type
- Configuring a Transition between States
- Managing Transition Listeners
- Managing the Standard Transition Listeners

Adding States to a Collection Type

The states of a collection type define properties, such as change control options, that vary throughout its lifecycle.

To add states to a collection type:

1. Right-click the collection type in the Collection Tree, and select **Collection Type Configuration** from the menu that appears.The Collection Type Configuration dialog appears.
2. Right-click **States** and select **New State** from the menu that appears:
   - A new state appears and you are prompted to rename it.
3. Enter a name for the State. Also, specify the annotation rules that will apply to the State. There are four annotation rules from which you may choose. The rules appear in the drop-down lists.



The options are:

- **Writable with Optional Annotation** – the user may supply annotation for changes if he wishes. He will not be prompted to supply it.
- **Read-Only** – the collection cannot be edited in this state.
- **Writable with Prompted Optional Annotation** – the user is prompted to supply annotation for changes, but is not required to supply it.
- **Writable with Required Annotation** –- the user must supply annotation for changes. The user will be prompted to enter annotation whenever a version of the collection is saved.

4. To add another state to the Collection Type, repeat steps 2 and 3.

Once you have defined the states, you must configure the transitions from one state to another. To set up a transition between states, see "Configuring a Transition between States" on page 148.

Configuring a Transition between States

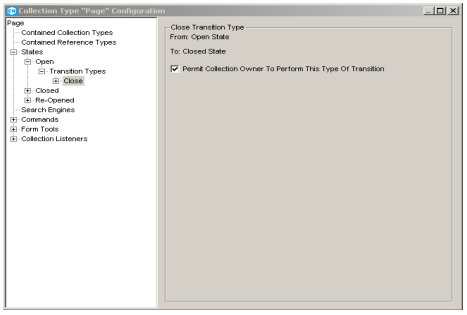
A transition is the action a user takes to move a collection from one state to another. For example, a "Close" transition may allow a user to move a collection from an Open state in which edits are permitted to a Closed state in which the collection is read-only.

You may also associated transition listeners with a transition, so that the effect of the transition is modified, usually by performing an operation that is associated with the transition.

To configure a transition between states:

1. Right-click the collection type in the Collection Tree, and select **Collection Type Configuration** from the menu that appears. The Collection Type Configuration dialog appears.
2. Click the plus sign next to **States** to expand the category and see the states that are associated with the collection type.
3. Click the plus sign next to the state that is to be the initial state in the transition. For example, click the plus sign next to **Open** to set up a transition from the Open state to the Closed state. The Transition Types category appears.
4. Right-click **Transition Types** and select **New Transition Type** from the menu that appears. A dialog appears, listing the possible target States for the Transition,
5. Click a target state and click the **Add** button.The target state appears within the list of Transition Types. To the right, a checkbox appears, with which you may specify

whether the owner of the collection can perform the Transition. By default, the owner of the collection can perform the transition, but in some cases, you may set up a transition that can only be performed by administrators or certain users.



6. Select whether the owner may perform the transition.

To associate a transition Listener with the transition, see "Transition Listeners" on page 149.

Transition Listeners

Transition listeners are used to perform a certain function with the transition of a collection from one state to another. For example, a transition may be from an open state that permits edits to a closed, read-only state. One of the standard transition listeners checks that required properties have been entered before the transition can be completed.

E-Notebook provides several, standard transition listeners that you may associate with transitions. You may also develop your own, customized transition listeners to perform additional functions.

See the following topics for more information:

- Associating a Transition Listener with a Transition
- Viewing and Editing the Properties of a Transition Listener
- Removing a Transition Listener from a Transition
- Managing the Standard Transition Listeners

Associating a Transition Listener with a Transition

Transition Listeners modify the effects of transitions, usually by performing an operation that is associated with the transition.

To associate a transition listener with a transition:

1. Follow steps 1-3 in the procedure "Configuring a Transition between States" on page 148. Right-click the collection type in the Collection Tree, and select **Collection Type Configuration** from the menu that appears.

   The Collection Type Configuration dialog appears.
2. Click the plus sign next to **States** to expand the category and see the states that are associated with the collection type.
3. Click the plus sign next to the state that is to be the initial state in the transition.

   For example, click the plus sign next to **Open** to set up a transition from the Open state to the Closed state.

1. The Transition Types category appears.
2. Click the plus sign next to **Transition Types** to expand it and see the transitions.
3. Right-click the transition with which you wish to associate the transition listener. A menu appears:
4. Select **New Transition Listener**. A new transition listener appears, and you are prompted to rename it.
5. Enter a name for the Transition Listener, and fill in its **IENTransitionListener Prog ID**. The transition listener is associated with the transition. The function it performs will

occur each time a a user conducts this type of transition on this type of collection.

See"The Standard Transition Listeners" on page 151 for descriptions of the standard transition listeners that E-Notebook provides.

Viewing and Editing the Properties of a Transition Listener

A transition listener may have custom properties associated with it. To view and/or edit the custom properties:

1. Follow steps 1-3 in the procedure "Configuring a Transition between States" on page 148. Right-click the collection type in the Collection Tree, and select **Collection Type Configuration** from the menu that appears.

   The Collection Type Configuration dialog appears.
2. Click the plus sign next to **States** to expand the category and see the states that are associated with the collection type.
3. Click the plus sign next to the state that is to be the initial state in the transition.

   For example, click the plus sign next to **Open** to set up a transition from the Open state to the Closed state.

1. The Transition Types category appears.
2. Click the plus sign next to **Transition Types** to expand it and see the transitions.
3. Click the transition listener whose properties you wish to view or change.
4. Click the **Custom Properties** button. If the transition listener has custom properties associated with it, a properties dialog appears, and you may view and/or edit the properties. If the transition listener has no custom properties associated with it, a message appears to that effect.

NOTE: None of the standard transition listeners have custom properties associated with them.

Removing a Transition Listener from a Transition

In some cases, you may no longer want to have a particular transition listener associated with the transition for a collection type.

To remove a transition listener from a transition:

1. Follow steps 1-4 in the procedure "Viewing and Editing the Properties of a Transition Listener" on page 150.
2. Right-click the relevant collection type in the Collection Tree, and select **Collection Type Configuration** from the menu that appears.

   The Collection Type Configuration dialog appears.
3. Click the plus sign next to **States** to expand the category and see the states that are associated with the collection type.
4. Click the plus sign next to the state that is to be the initial state in the transition.

   For example, click the plus sign next to **Open** to set up a transition from the Open state to the Closed state.

   The Transition Types category appears.
5. Click the plus sign next to **Transition Types** to expand it and see the transitions.
6. Right-click the transition listener you wish to remove.

7. Select **Delete Transition Listener**. A message appears, asking you to confirm that you wish to delete the Transition Listener.
8. Click **Yes**. The transition listener is removed from the transition.

The Standard Transition Listeners

Transition listeners are used to perform a certain function that is associated with a transition from one state of a collection to another. E-Notebook provides several, standard transition listeners that you may associate with transitions.

They are:

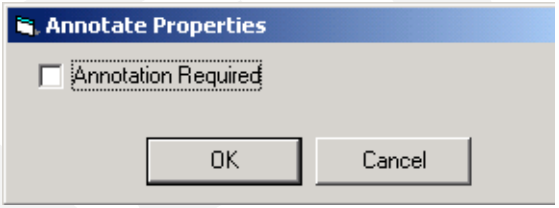
- Annotate Transition Listener – prompts the user for an annotation that is associated with the transition.
- Required Properties Transition Listener – checks to ensure that the contents of the property list and tables meet the configured Required or Not Blank option. If they do not, then the transition will not be completed
- Locked Container Transition Listener – checks to ensure that the container of the collection is in a state which permits full control over the contents of the container.
- Unlocked Contents Transition Listener – checks to ensure that the collections contained within a collection are all locked before the container collection can transition into a locked state.
- Change Display Transition Listener – enables Visual Display of Changes when the transition is performed.
- Final Print Transition Listener – forces the printout of the entire collection before the transition completes.

The Annotate Transition Listener

When a user performs the transition, the Annotate listener prompts the user for an annotation that is associated with the transition.

Listener	Listener ProgID
Comment	ENStandard11.AnnotateTListener

If you would like to make the annotation required, you can configure the custom properties.



Click the **Annotation Required** checkbox to select it, then click **OK** to close the dialog.

The Change Display Transition Listener

The Change Display Transition Listener is used to enable Visual Display of Changes when a user performs a particular transition. (See “Visual Display of Changes” on page 155).

Listener	Listener ProgID
Change Display	ENStandard11.ChangeDisplayTListener

The Change Display Transition Listener has no custom properties associated with it.

Note that there is also a collection listener that can be used to enable Visual Display of Changes as soon as a collection is created. See

"The Change Display Collection Listener" on page 139 for more information.

The Change Security Transition Listener

The Change Security Transition Listener enables Inherits Security for a collection during a transition. This may be used, for example, to limit access to an experiment before it is in a Closed state.

Listener	Listener ProgID
Change Security Transition	ENStandard11.ChangeSecuTransLstnr

With the custom properties of the transition listener, you have the option to specify whether, if a particular property in the collection is filled in, the Inherits Security option should remain off even after the transition is completed. Specifically, you can specify:

- Whether the property is in the collection or an associated indexing collection.
- Section type containing the property
- Property list containing the Property
- Whether inherits security should be set or not if the property is filled in.

The Confirm Transition Listener

The Confirm Transition Listener prompts a user to confirm a specific transition prior to the transition occurring and displays a message to the user whenever he goes for any transition, asking him to confirm that he is sure he wants to proceed with a transition. If the user clicks **Yes**, then the transition proceeds. If the user clicks **No**, then the transition is canceled.

Listener	Listener ProgID
Confirm Transition	ENStandard11.ConfirmTListener

The Confirm Transition Listener has no custom properties associated with it.

The Export Transition Listener

The Export Transition Listener supports the printing workflow. It makes it possible to export the contents of a collection as part of a transition.

Listener	Listener ProgID
Export Transition	ENStandard11.ExportTListener

The rendering sections and their corresponding templates must be set as properties of this listener.

The Final Print Transition Listener

The final print transition listener can be added to a transition to force the printout of the entire collection before the transition continues. The name of the export template used for the final print is "<Region> Final Print" where <Region> is replaced by the name of the region of the currently logged-in user.

When this transition listener is associated with a transition type, transitions will be interrupted with a message box as follows:

- "Click OK to print the final print of <Collection> using the printer <PrinterName>".

- where <Collection> is replaced with a description of a collection, such as “experiment CS-00005” and <PrinterName> is replaced with the name of the default printer.

If the user clicks **OK**, then the transition proceeds by printing all of the pages of the collection to the default printer. If the user clicks **Cancel**, then the transition is canceled.

After the printout is completed, another message box appears as follows:

- “Did the final print of <Collection> succeed?
  - **Yes** - Continue with this transition
  - **No** - Print again
  - **Cancel** - Abort this transition”

where <Collection> is replaced with a description of a collection.

If the user clicks **Yes**, then the transition proceeds. If the user clicks **No**, then the pages are printed again and the message box re-appears. If the user clicks **Cancel**, then the transition is canceled.

If the user wants to change the default printer, they should choose print setup prior to performing the transition.

Listener	Listener ProgID
Final Print	ENStandard11.FinalPrintTListener

The Final Print Transition Listener has no custom properties associated with it.

The Locked Container Transition Listener

The Locked Container listener checks to ensure that the container of the collection is in a state which permits full control over the contents of the container.

For example, consider an Experiment collection contained within a Notebook collection. Closed is a read-only (locked) state; the Reopen transition moves a collection from the Closed, read-only state to a state in which edits are permitted. If the Locked Container Listener is associated with the Reopen transition of the Experiment collection type, then users will be prevented from reopening an Experiment within a Notebook that is in the Closed (locked) state.

Listener	Listener ProgID
Locked Contents	ENStandard11.LockedContainerListener

The Locked Container Transition Listener has no custom properties associated with it.

The Print Transition Listener

The Print Transition Listener supports the printing workflow. It makes it possible to print the contents of a collection as part of a transition.

Listener	Listener ProgID
Print Transition	ENStandard11.PrintTListener

The rendering sections and their corresponding templates must be set as properties of this listener.

The Required Non-Blank Properties Transition Listener

The Required Non-blank Properties Transition Listener prevents a transition from occurring if specific properties are not filled in.

Listener	Listener ProgID
Required Non-blank Properties Transition	ENStandard11.RequiredNonBlankTListener

The Required Rows Transition Listener

The Required Rows Transition Listener prevents a transition from occurring if specific rows are missing from a table.

Listener	Listener ProgID
Required Rows Transition	ENStandard11.RequiredRowsTListener

The Required Properties Transition Listener

The Required Properties listener checks to ensure that the contents of the property list and table section cells within the specified collection conform to the Required and Not Blank options associated with the properties of the property list and table fields. If a property in a property list or a table property does not conform with the corresponding Required or Not Blank option, then the transition will not be completed.

Listener	Listener ProgID
Required Properties	ENStandard11.RequiredPropertiesListener

The Required Properties Transition Listener has no custom properties associated with it.

The Sign Version Transition Listener

The Sign Version Transition Listener invokes E-Signatures with a particular transition.

Listener	Listener ProgID
Sign Version Transition	ENStandard11.SignVersionTL

The Configuration of this listener includes:

- Whether or not a countersignature is required
- The transition that should occur upon successful completion of the signature process (e.g., “to Closed”)
- The transition that should occur upon failure of the signature process (e.g., “to Open”)

The Unlocked Contents Transition Listener

The Unlocked Contents listener checks to ensure that the collections contained within a collection are all locked before the container collection can transition into a locked state (meaning that the change and annotation rules for the state are Read-Only).

For example, consider an Experiment collection contained within a Notebook collection. Closed is a read-only state, and the Close tran-

sition moves a collection from an unlocked, editable state to the Closed, read-only state. If the Unlocked Contents Listener is associated with the Close transition of the Notebook collection type, then users will be prevented from closing a Notebook if it contains experiments that are not Closed.

Listener	Listener ProgID
Unlocked Contents	ENStandard11.UnlockedContentsListener

The Unlocked Contents Transition Listener has no custom properties associated with it.

The View Signed Versions Transition Listener

The View Signed Versions Transition Listener allows a user to view all of the electronically-signed renditions of a collection. This listener is used with the E-Signatures feature.

Listener	Listener ProgID
View Signed Versions Transition	ENStandard11.DisplaySignedVersionTL

This listener has no custom properties.

Visual Display of Changes

Depending the collection type and its state, it is possible for users to view a **Visual Display of Changes** that have been made to data in the collection. If Visual Display of Changes is enabled, the changes that have been made to a collection can be viewed in E-Notebook, and the changes will be shown in the printed collection.

Visual Display of Changes may be enabled from the very beginning of the collection life cycle, when the collection is first created. Alternatively, you may enable Visual Display of Changes when a user performs a particular collection transition; a common example is the transition from a closed, read-only state to a reopened state in which edits are permitted.

The version of the collection that existed when the Visual Display of Changes began is called the Baseline Version of the collection.

NOTE: a version is created each time the collection is saved.

Users will see this version highlighted in the History Pane. If Visual Display of Changes is enabled, there are visual indicators next to the data that was changed after the Baseline Version was saved. See the User Guide for further description of the ways changes are presented to the user.

When Visual Display of Changes is enabled for a collection, the printed output will include:

1. the baseline version that existed at the time that Visual Display of Changes began **and**
2. all subsequent changes.

TIP: Once Visual Display of Changes is enabled for a collection, it remains enabled for the life of the collection.

Enabling Visual Display of Changes from Collection Creation Onward

To begin the Visual Display of Changes at collection creation:

1. Right-click the Collection Type in the Collection tree, and select **Collection Type Configuration** from the menu that appears.
2. Right-Click **Collection Listeners** and select **New Collection Listener** from the menu that appears. A new collection listener appears and you are prompted to rename it.
3. Type in a name for the collection listener.
4. Enter **ENStandard11.ChangeDisplayListener** as the IENCollectionListener ProgID for the listener you wish to add. The collection listener is associated with the collection type.
5. To close the collection type configuration dialog, click the **Close** button in the upper right corner. The dialog closes. New collections of this type will have Visual Display of Changes enabled for their entire lifecycles.

Enabling Visual Display of Changes with a Transition

To enable Visual Display of Changes when a user performs a particular collection transition:

1. Right-click the collection type in the Collection tree, and select **Collection Type Configuration** from the menu that appears. The Collection Type Configuration dialog appears.
2. Click the plus sign next to **States** to expand the category and see the states that are associated with the collection type.
3. Click the plus sign next to the state that is the initial state in the transition. For example, the transition is from **Closed** state to the **Reopened** state. The Transition Types category appears.
4. Click the plus sign next to **Transition Types** to expand it and see the transitions.
5. Right-click the transition with which you would like the Visual Display of Changes to begin. A menu appears:
6. Select **New Transition Listener**. A new Transition Listener appears, and you are prompted to rename it.
7. Enter a name for the transition listener, and enter **ENStandard11.ChangeDisplayTListener** as its IENTransitionListener Prog ID.Visual Display of Changes will be enabled when a user performs this transition on a collection of this type.

Note that even when Visual Display of Changes is not enabled, the audit trail still captures the history, and the history pane displays a list of the saved versions and transitions for a collection.

Configuring Change Control Options

E-Notebook provides auditing and change control features. For every change that a user makes, an audit trail records the logged in identity of the user, the date, and the time. This is done automatically when users add, delete, or update data. The audit trail information is stored in the E-Notebook database.

In addition, you may configure E-Notebook such that users must annotate the changes they make to collections. You may also enable Visual Display of Changes at some point in the life cycle of a collection.

See the following topics:

- Managing Visual Display of Changes
- Configuring Annotation Options
- Configuring Autosave

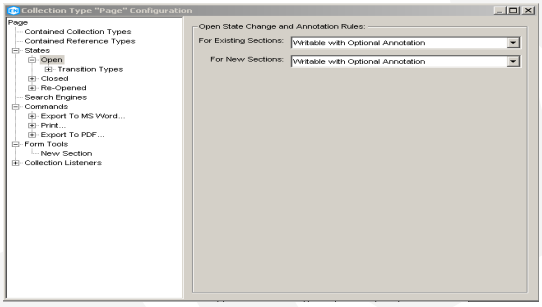
Configuring Annotation Options

You may configure E-Notebook such that users can annotate the changes they make to collections. E-Notebook provides four options

for annotation. You configure these options on a per collection type, per state basis. This allows you to configure different annotation rules for the different phases of a collection lifecycle.

To configure the annotation rules for a state:

1. Right-click the collection type in the Collection tree, and select **Collection Type Configuration** from the menu that appears. The Collection Type Configuration dialog appears.
2. Click the plus sign next to **States** to expand the category and see the states that are associated with the collection type.
3. Click the state for which you are configuring the annotation options.



- You may select an annotation rule for:
    - Existing Sections **and**
    - New Sections.
4. There are four annotation rules from which you may choose. The rules appear in the dropdown lists.

- The options are:
    - **Writable with Optional Annotation** – the user may supply annotation for changes if he wishes. He will not be prompted to supply it.
    - **Read-Only** – the collection cannot be edited in this state.
    - **Writable with Prompted Optional Annotation** – when the collection is saved, the user is prompted to supply annotation for changes, but is not required to supply it.
    - **Writable with Required Annotation** – when the collection is saved, the user must supply annotation for changes. The user will be prompted to enter annotation whenever a version of the collection is saved.
5. Select the annotation rules you wish to apply to the state. When a collection of this type is in this state, the annotation option you have selected will apply.

If you would like users to provide annotation when they perform a particular transition, you can associate the Annotate Listener with the transition.

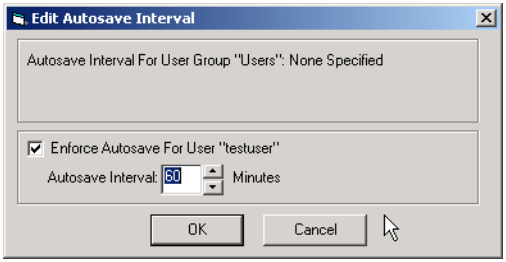
Configuring Autosave

The Autosave feature allows changes to be saved automatically to the database after a specified time interval following a change made to the contents of a section. The autosave interval for a particular collection can either by specified by a user that has full control over the collection or can be inherited from the parent collection.

To specify the autosave interval for a collection

1. In the collection tree, right-click the collection and choose the **Collection Properties** from the menu that appears. The autosave interval appears, in units of minutes. If no autosave interval has been specified for the collection or its containing collection, then the autosave interval is “None” and no autosave will occur for the collection.

2. Click the **Edit Autosave Interval** button. The **Edit Autosave Interval** dialog box appears. In this dialog box, you can specify the autosave interval for the collection. The top portion of the dialog box displays the autosave interval for the parent collection.



3. Enter the autosave interval for the collection and click **OK**. The autosave interval appears in the Collection Properties dialog.

If the autosave interval you have specified is greater than the autosave interval of the container of the collection, then the autosave interval of the container will override the autosave interval specified for the collection.

Export Templates of Collection Types

Collection type export templates allow users to print E-Notebook sections in a collection, or to export sections to Microsoft Word. You create export templates in MS Word sections, using tags to refer to E-Notebook fields.

An export template must be set up for each new collection type you create.

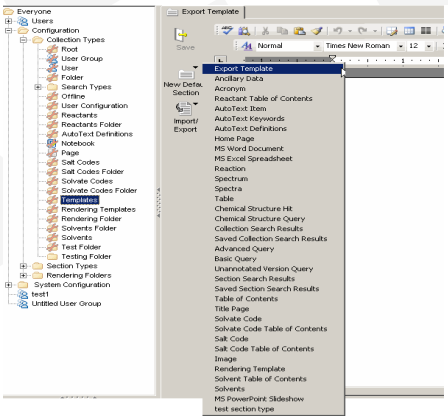
Creating and Editing the Export Templates for a Collection Type

The export template for a collection type allows users to print the E-Notebook sections in a particular collection, and to export sections to Microsoft Word. The headers and footers from the collection type export template are used in the printout.

Creating the Export Templates for a Collection Type

To create an export template:

1. Select the collection type in the Collection Tree
2. Right-click in the right frame



3. Select **Export Templates**.
   - The right frame is blank if there is no export template associated with the collection type.
   - An MS Word section appears in the right frame.

Editing the Header and Footer Information

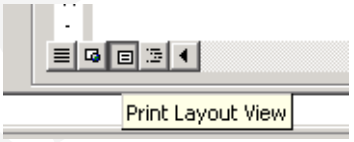
The header and footer is printed on every page when a user prints the collection or a portion of the collection. The header and footer of a col-

lection type export template can contain standard replacement tags with the following data:

Tag	Replacement
<collectionStatus>	The state of the collection. (Note that if you are using the Final Print Transition Listener, the state will print as the initial state of the transition, and not as the target state. In this specific case, if you would like the name of the target state to print, simply type the text name of the state into the header or footer.)
<dateCreated>	The timestamp of creation of the collection
<dateModified>	The timestamp of last modification
<datetoday>	The timestamp of the creation of the export document or printout
<collectionOwner>	The name of the owner of the collection
<collectionName>	The name of the collection
<collectionType>	The type of the collection

To edit this data:

1. While viewing the export template in E-Notebook , click the print layout view button in the lower left corner of the MS Word field. It is the third button in the row.



   - The export template appears in print layout view, and the header is visible
2. Double-click the header or footer.
3. Edit as desired.

13

Managing Fields

Fields are the basis for the forms in E-Notebook. Each field is based on an add-in field type. E-Notebook provides many standard field types, which you can use to configure your own data forms, searches, and analysis tools. You may also develop addition add-in field types for your own, custom data types.

The field types in E-Notebook span many, diverse types of data. They make it possible to customize E-Notebook to match your workflow and manage your information in the most effective way possible.

Click the links below to view information about the various field types.

The following field types are designed for use in data forms, for data entry, analysis, and display:

- Active Document Fields
- Ancillary Data Fields
- AutoText Fields
- Chemical Structure Fields
- Collection Type Domain Fields
- Context Sensitive Help Fields
- Database Table Fields
- Database Table Filter Fields
- Database Value Fields
- Excel® Spreadsheet Fields
- Image Fields
- PowerPoint® Slideshow Fields
- Property List Fields
- Reaction Toolbar Fields
- Spectrum Fields
- Stored Document Fields
- Styled Text Fields
- Subsection Fields
- Table Fields
- URL Display Fields

Several Fields Types are designed for use exclusively within search forms, to search for data in E-Notebook. They are:

- Chemical Query Fields
- Collection Query Fields
- Collection Type Query Fields
- Query Text Fields
- State Query Fields
- Property Query Fields
- Table Query Fields
- Unannotated Version Query Fields
- Search Location Fields
- Join Type Fields

For information about adding custom field types that you have developed, see “The Add-In Configuration” on page 189.

Other topics in this portion of the documentation are:

- Time Settings
- Managing Units in Property Lists and Tables

Data Fields

The following E-Notebook field types are designed for use in data forms, for data entry, analysis, and display:

- Active Document Fields (MS Word fields)
- AutoText Fields
- Chemical Structure Fields
- Database Table Fields
- Excel Fields
- Property List Fields
- Spectrum Fields
- Stored Document Fields
- Subsection Fields
- Table Fields
- URL Display Fields

- Active Document Fields (MS Word fields)
- AutoText Fields
- Chemical Structure Fields
- Database Table Fields
- Excel Fields
- Property List Fields
- Spectrum Fields
- Stored Document Fields
- Subsection Fields
- Table Fields
- URL Display Fields

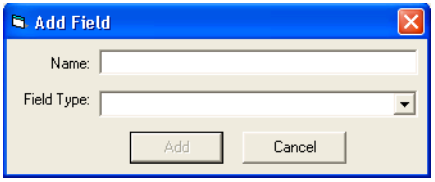
Several fields types are designed for use exclusively within search forms, to search for data in E-Notebook . See“Search Fields” on page 185 for information about these fields.

Active Document Fields

Active Document Fields allow users to view and edit MS Word documents within E-Notebook sections. If you associate the Active Document Form Tool with an active document field, users can import MS Word documents from external sources, or export MS Word documents and edit them in MS Word.

To add an Active Document field:

1. In the Collection Tree, right-click the section type to which you wish to add the property list.
2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click **Fields>New Field**. The **Add Field** dialog appears.



4. Enter a name for the field and select **Active Document** from the drop-down list of field types.

5. Click the **Add** button. The new field appears in the list of fields.

NOTE: In order for users to be able to import and export the MS Word documents, you must use the IMPORT/EXPORTwith the field.

Once you have added a field to the section type, you may add it to the form for the section type. See "Configuring a Form" on page 119 for more information.

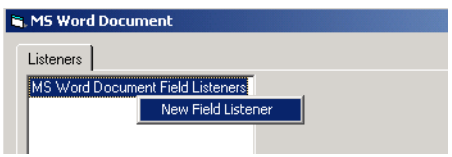
Active Document Field Listeners

An Active Document Field Listener modifies the behavior of an MS Word field in E-Notebook. E-Notebook provides an active document listener that prevents users from adding hyperlinks to external URLs. See "The Prevent External Link Active Document Field Listener" on page 163.

You may also develop your own Active Document Field Listeners to further customize the behavior of active document fields in E-Notebook.

To add an active document field listener:

1. From the Section Type Configuration dialog, right-click the active document field to which you wish to add the listener.
2. Select **Field Properties** from the menu that appears. The **Listeners** dialog appears.
3. Right-click Listeners in the left frame and select **New Field Listener** from the menu that appears.



A dialog appears, prompting you to enter the ProgID.

4. Enter the ProgID and click **OK**.

To view and edit the properties of the active document listener:

1. Click the listener. The ProgID and properties button appear to the right.
2. Click the **Properties** button. If the listener has properties associate with it, they are displayed, and may be edited.

The Prevent External Link Active Document Field Listener

The Prevent External Link Active Document Field Listener may be associated with active document fields to prevent users from adding hyperlinks to external URLs. If external links are present in the field, the user must remove them before the field can be saved.

Active Document Listener	IENActiveDocListener ProgID
Prevent External Link	ENStandardCtl11.RequireENURLDListener

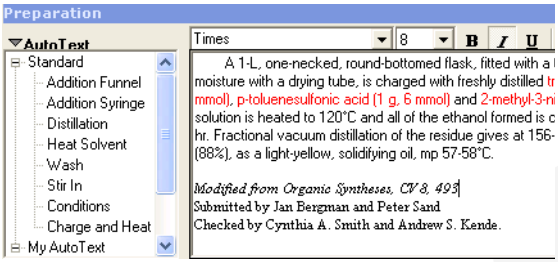
AutoText Fields

With AutoText Fields, users can enter text that is related to other data in a form. Users can add predefined fragments of text automatically, and values from other fields in a section may be pulled in as well. The E-Notebook User's Guide provides instructions for configuring AutoText. Note that for the AutoText features to function, the AutoText collection type name, section type name, and field names in the section type must not be changed.

If you configure the Styled Text Field to display the toolbar, users may alter any of the following formatting options.

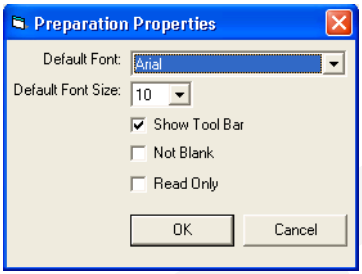
- Font
- Font Size
- Bold
- Italics
- Underline
- Superscript
- Subscript

An example of a Styled Text Field is shown below.



To add a Styled Text field:

1. In the Collection tree, right-click the Section Type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click **Fields>New Field**. The **Add Field** dialog appears.
4. Enter a name, and select **AutoText** from the drop-down list of field types.
5. Click **Add**. The new field appears in the list of fields.
6. Right-click the styled text field, and select **Field Properties** from the menu that appears.



- You may edit the following properties, if desired:
  - **Default Font** – you may change the font with the drop-down list from the default Times New Roman.
  - **Default Font Size** – you may select a larger or smaller font size from the drop-down list.
  - **Show Tool Bar** – if you clear the check-mark, the toolbar will not appear above the styled text field in the form.
  - **Not Blank** – If you select this option, the styled text field *must* contain text when a user performs a specific transition on a collection.

NOTE: This option must be used in conjunction with the Required Properties Transition Listener.

  - **Read Only** – the styled text field is for display only, and only administrators may edit it.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

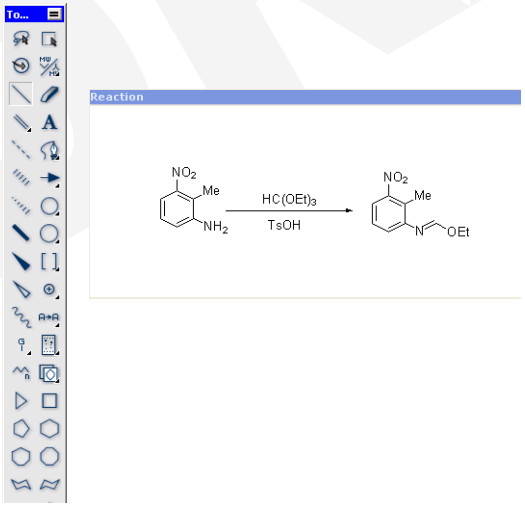
Chemical Structure Fields

Chemical Structure Fields make it possible for users to draw or import drawings of chemical structures and reactions. These fields make use of the ChemDraw ActiveX Control. An example of a Chemical Structure Field is shown below. These fields may also be used for images. Users can paste in standard images, such as GIFs and JPEGs.

Users can access a ChemDraw menu by right-clicking within the structure window. This menu allows a user to, among other things, copy and paste structures.

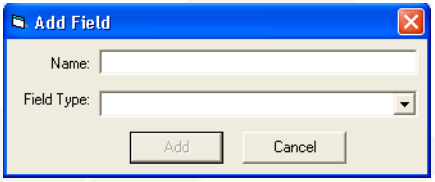
Users may dismiss the ChemDraw toolbar at any time. For more information about using the ChemDraw Toolbar, please see the ChemDraw User's Guide.

It is possible to associate a listener with a chemical structure field to perform a specialized function. E-Notebook offers a listener that automatically updates the stoichiometry grid when a user modifies a reaction drawing. See"The Analyze Reaction Chemical Structure Listener" on page 166 for more information.



To add a chemical structure field to a section type:

1. In the Collection Tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.The Section Type Configuration dialog appears.
3. Right-click and select **Fields>New Field**.The **Add Field** dialog appears.



4. Enter a name, and select **Chemical Structure** from the drop-down list of field types.
5. Click the **Add** button. The new field appears in the list of fields.

NOTE: Anything that you draw in the Chemical Structure Field will appear with the new sections of this type that users create.

Once you have added a field to the section type, you may add it to the form for the section type. See "Configuring a Form" on page 119 for more information.

Chemical Structure Field Listeners

An Chemical Structure Field Listener modifies the behavior of a chemical structure field in E-Notebook . E-Notebook provides a listener that automatically updates a stoichiometry grid when a user edits a reaction. See "The Analyze Reaction Chemical Structure Listener" on page 166.

You may also develop your own Chemical Structure Field Listeners to further customize

the behavior of chemical structure fields in E-Notebook.

To add a chemical structure field listener:

1. From the Section Type Configuration dialog, right-click the chemical structure field to which you wish to add the listener.
2. Select Field Properties from the menu that appears. The Listeners dialog appears.
3. Right-click Listeners in the left frame and select **New Field Listener** from the menu that appears. A dialog appears, prompting you to enter the ProgID.
4. Enter the ProgID and click **OK**.

To view and edit the properties of the chemical structure field listener:

1. Click the listener. The Prog ID and properties button appear to the right.
2. Click the **Properties** button. If the listener has properties associate with it, they are displayed, and may be edited.

The Analyze Reaction Chemical Structure Listener

The Analyze Reaction Chemical Structure Listener may be associated with chemical structure fields to update a stoichiometry grid automatically when a user edits a reaction drawing. For automatic analysis to occur, you must also associate the Analyze Reaction Table Listener with both the reactants and products table fields.

Active Document Listener	IENActiveDocListener ProgID
Analyze Reaction	ENStandardCtl11.AnalyzeRxnCSListener

This listener has custom properties associated with it. You must select the reactants field and the products field in the stoichiometry grid.

See the related topics below for information about the listener to a section type.

Database Table Fields

Database table fields display the results of a SQL SELECT statement (represented as an ADO record set). These fields are for display only, and users may not edit them.

A Database Table Field may exist independently in a section. Or, you may set up the field such that its value(s) are determined by a value in a separate property list field that is part of the same section.

See the following topics:

- Creating a Database Table Field
- Configuring a Database Table Field

Creating a Database Table Field

Database Table Fields are used to display data that is pulled in from an external database.

To create a Database Table Field:

1. In the Collection tree, right-click the Section Type to which you wish to add the Property List.
2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click and select **Fields>New Field...** The **Add Field** dialog appears.
4. Enter a name, and select Database Table from the drop-down list of field types.
5. Click **Add**. The new Field appears in the list of Fields.

See “Configuring a Database Table Field” on page 167 for instructions on defining the data to be displayed in the Field.

Once you have added a field to the section type, you may add it to the form for the section type. See "Configuring a Form" on page 119 for more information.

Configuring a Database Table Field

Database Table Fields are used to display data that is pulled in from a database.

To configure a Database Table Field:

1. Right-click the Database Table Field in the Section Type Configuration dialog, and select **Field Properties** from the menu that appears. The Properties dialog appears.
2. Enter the following information. (See below for examples).
    - **Connection String:** A string used to define a connection to a database. If this string is 0-length (Null in the database), then it is assumed to be a connection to the primary schema of the E-Notebook database. If the string is a path to an.mdb file, then a connection is made to that file using the Microsoft Access OLEDB provider. Otherwise, the string is treated as a valid string that can be assigned to an ADODB.Connection object's ConnectionString property.
    - **Username:** An optional string used to specify the login identification required to connect to the specified database. If the Username is 0-length and the Connection String is 0-length, then the owner of the primary schema of the E-Notebook database is used as the username.
    - **Password:** An optional string used to identify the login ID required to connect to the specified database. If the UserName is 0-length and the Connection String is 0-length, then the password is ignored.
    - **SQL String:** A required string that starts with the text?SELECT?. This string is used to specify the record set that appears within the E-Notebook section. The SQL String can have the following special phrases that are dynamically replaced based on the location of the section cell.
    - **%%section_key%%:** The unique identifier for the section containing the section cell in which the record set appears. This datum corresponds to a value in the primary_key column for a row in the ELN_sections table.
    - **%%field_key%%:** The unique identifier for the field that describes the section cell in which the record set appears. This datums corresponds to a value in the primary_key column for a row in the ELN_fields table.
    - **%%collection_key%%:** The unique identifier for the collection that contains the section containing the section cell in which the record set appears. This datum corresponds to a value in the section_set_key column for a row in the ELN_collections table.
    - **%%session_key%%:** The unique identifier for the database session in which the record set is retrieved. This datum corresponds to a value in the primary_key column for a row in the ELN_sessions table.
    - **%% logged_in_user_key%%:** The unique identifier for the person record for the user that initiated the database session in which the record set is retrieved. This datum corresponds to a value in the primary_key column for a row in the ELN_people table.
    - **%%home_collection_key%%:** The unique identifier for the home collection of the user that initiated the database session in which the record set is retrieved. This datum corresponds to a value in the

section_set_key column for a row in the ELN_collections table.

- **%%access_view%%:** The name of the table used to validate security privileges for the logged in user.

In addition, a SQL string may contain the name of a property that appears in a property field in the same section as the DBTable section cell. This property field is identified using the property field name property of the SQL section cell, below. For example, a property could appear in the WHERE clause of the SQL statement to determine which records in the database table appear.

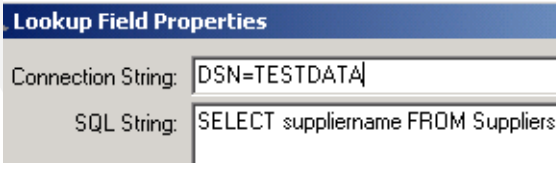
- **Property List Field:** An optional name of a property list field that contains properties which are used to parameterize the SQL statement, above.

3. Click **OK**.

Several examples are given below. Note that the syntax of the query may vary depending upon the type of database you are querying.

EXAMPLE 1 – DATABASE LOOKUP CONFIGURATION

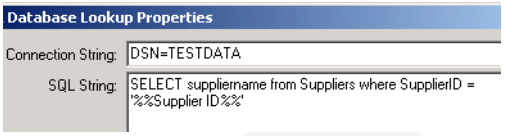
In this example, all of the values for **suppliername** are pulled in from the external database table **Suppliers**. The values will appear in a drop-down list in the property cell.



- **suppliername** - value to be displayed in Database Lookup Table
- **Suppliers** - name of external database table

EXAMPLE 2– DATABASE LOOKUP CONFIGURATION

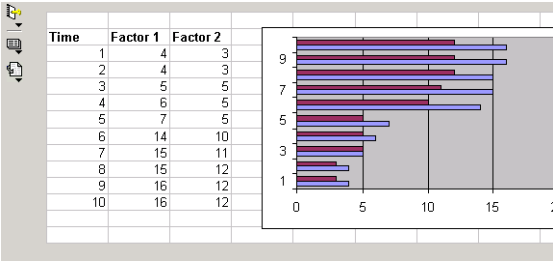
In this example, the value **suppliername** is pulled from the external database table **Suppliers.** The suppliername displayed in the database table field corresponds to the value that a user has entered into a property list. A user enters **SupplierID** into the **Supplier ID** property, which exists in a Property List named **ID Number**.



- **suppliername** - value to be displayed in Database Lookup Table.
- **Suppliers** - name of external database table.
- **SupplierID** - the supplier ID field in the external database table.
- **ID Number** - name of the E-Notebook property list containing the Supplier ID property.
- **Supplier ID** - name of the E-Notebook property into which a user enters the value for SupplierID.

Excel Fields

Excel Fields make it possible for users to embed and edit Microsoft Excel documents in E-Notebook sections. An example of an Excel Field is shown below. If the Active Doc Form Tool is associated with the section, a user may import or export the document.



To add an Excel Field section type:

1. In the Collection Tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.The Section Type Configuration dialog appears.
3. Right-click and select **Fields>New Field**. The **Add Field** dialog appears.
4. Type in a name, and select **Excel Spreadsheet** from the drop-down list of field types.

   Click **Add**.The new field appears in the list of fields.

NOTE: In order for users to be able to import and export the MS Excel spreadsheet, you must use IMPORT/EXPORT with the field.

Once you have added a field to the section type, you may add it to the form for the section type. See "Configuring a Form" on page 119 for more information.

Property Lists

Property Lists are used in forms to record various types of data properties. Property lists allow the following data types:

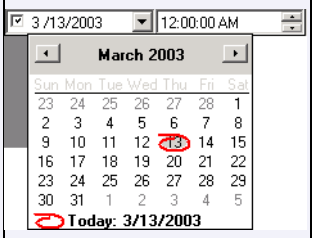
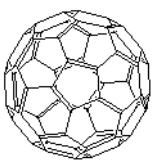
Data type	User perspective	
Date	A user may click the date box, and type in a date and time.	
Text	A user may enter text.	
Number	A user may enter a number. A property may also be configured to have units associated with it.	
Structure	A user may enter a chemical structure drawing.	

Table 13.1 Allowable data types

Data type	User perspective	
Enumerated Value	A user may choose a value from the drop-down list. The values may be from either a preconfigured list or a list that is pulled from an external database.	
Validated Value	A user may enter a value, which is validated against an external database.	

Table 13.1 Allowable data types

You may configure property lists so that they are read-only, or so that they must contain certain values before a collection transition is performed.

Another feature of property lists is the ability for users to add references to them. A user who adds a reference to a property may navigate to the collection or referenced section simply by clicking a link in the property cell.

Creating a Property List

To add a Property List to a Section Type:

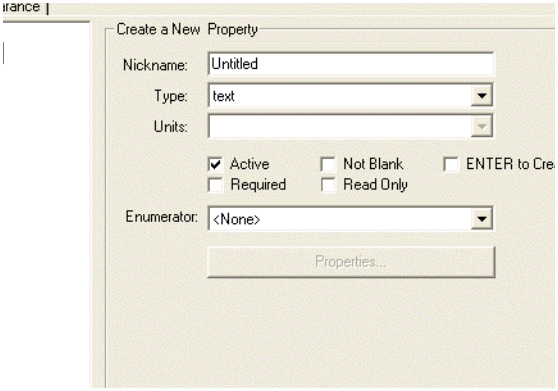
1. In the Collection tree, right-click the Section Type to which you wish to add the Property List.
2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click **Fields>New Field**. The **Add Field** dialog appears.
4. Enter a name for the field and select **Property List** from the list of Field Types.
4. Click **Add**. The new Field appears in the list of Fields.

ADDING A PROPERTY TO THE PROPERTY LIST

To add a Property:

1. Right-click the Property List field in the Section Type Configuration dialog. A menu appears.
2. Select **Field Properties.** The Field Properties dialog appears.
3. Click the **Properties** tab.The Properties tab appears.
4. Right-click the name of the field and select **New Property** from the menu that appears.

- A new property appears in the tree. It's attributes appear to the right:



5. Type in a **Name** and **Nickname** for the property.

- **Name –** appears when a user selects the property for a search.
- **Nickname** – is displayed on the screen, in the printed copy, and in an exported Word document.

6. Select the **Type** from the drop-down list. (See "Units in Property Lists and Tables" on page 192 for more information).
7. Select the **Units** from the drop-down list (if applicable for the Type you have selected).
8. Click the checkboxes for the attributes you wish to apply to the property:
   - **Active** – users can add new instances of the Property to the Sections they create.
   - **Read-Only** – the property is for display only, and users may not edit it.
   - **Required** – the user may not delete the property from the section.
   - **Not Blank** – users must enter a value for the property before they can perform a particular transition on the Collection. For example, you may set up an experiment Collection so that the user must enter an equipment id before closing the experiment. A user who has not entered a value for the property will be prompted to enter it when attempting to perform the transition.

NOTE: The Not Blank attribute must be used in conjunction with the Required Properties Transition Listener.

   - **ENTER to Create New Line** – if a user is editing the property and presses **ENTER**, a new instance of the property will appear in the property list.
9. If the property is of data type TEXT, you may select the following:
   - **Enumerator** – values displayed in a dropdown list for any particular property may be pulled from an external database, or from a list of values you enter. See "Database Values in Property Lists" on page 172.

CONFIGURING THE APPEARANCE OF A PROPERTY LIST

To configure the appearance of a property list:

1. Click the **Appearance** tab.
2. Select a Font from the drop-down list.
3. Select a font size from the Font Size drop-down list.
4. Select whether or not the grid lines will be displayed, by clicking the checkbox.

Once you have added a field to the section type, you may add it to the form for the section type. See "Configuring a Form" on page 119 for more information.

Enumerated Values in Property Lists

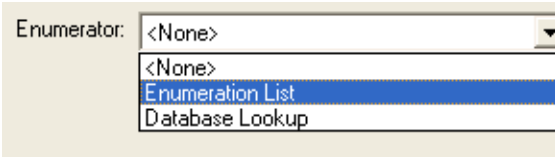
You may configure a text property so that it will contain a list of enumerated values. A user may then select one of the values from a drop-down list that appears in the property cell. This list of values may be either manually entered, as described here, or pulled from an external database, as described in "Database Values in Property Lists" on page 172.

ASSOCIATING A LIST OF MANUALLY ENTERED VALUES WITH A PROPERTY

1. In the Collection Tree, right-click the section type containing the property you wish to configure.
2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click the property list field in the list of fields, and select **Field Properties** from

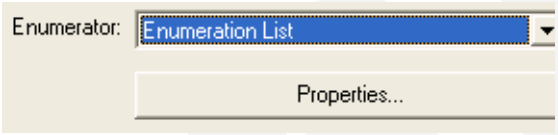
the menu that appears. The Field Properties dialog appears.

4. Click the property for which you would like to add the list of enumerated values. The attributes of the property appear to the right.
5. Click the drop-down arrow for the **Enumerator**, and select **Enumeration List**.



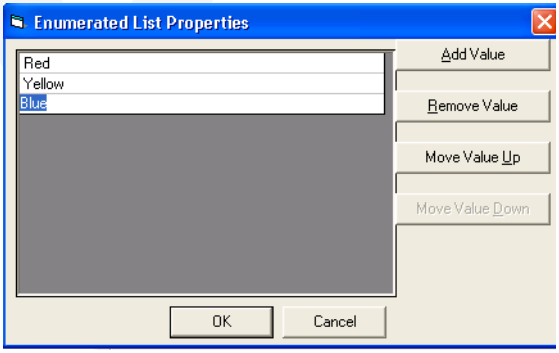
6. Click the **Properties** button.

NOTE: Note: the button will only be enabled for a property of data type text.



- The Enumerated List Properties dialog appears.

7. Click the **Add Value** button. A blank item appears in the list.
8. Enter a value.



9. Click **Add Value** to add another value, or **OK** to close the dialog. The values you entered will appear in a drop-down list in the property cell.

EDITING AN ENUMERATED VALUES LIST

1. In the Collection Tree, right-click the section type you wish to configure.
2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click the property list field in the list of fields, and select **Field Properties** from the menu that appears. The Field Properties dialog appears. Click the property whose values you wish to edit. The attributes of the property appear to the right. **Enumeration List** is displayed as the type of Enumerator.
4. Click the **Properties** button under the Enumerator.The Enumerated List Properties dialog appears.
5. Click any of the values to edit it, or click **Remove Value** to delete it. To move a value up or down in the list, click the **Move Value Up** or **Move Value Down** button, respectively.
6. Click **OK** to close the dialog.

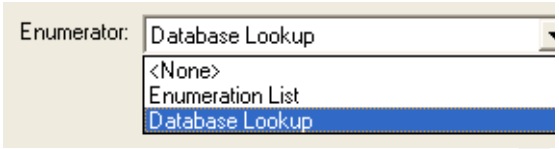
Database Values in Property Lists

Database lookups are used to pull in and display values from a database. You may also validate a value that a user enters into a property list against an external database; see “The Validate Value Property List Listener” on page 176 for more information.

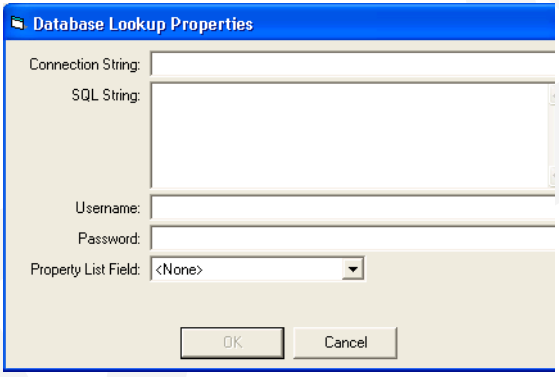
To configure a database lookup in a property list:

1. In the Collection tree, right-click the section type you wish to configure.

2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click the property list field in the list of Fields, and select **Field Properties** from the menu that appears. The Field Properties dialog appears.
4. Click the property whose value(s) you wish to pull from an external database.
5. Click the drop-down arrow for **Enumerator**, and select **Database Lookup**.



6. Click the **Properties** button. The Database Lookup Properties dialog appears.



- See "Configuring a Database Table Field" on page 167 for descriptions of the fields.

7. Fill in the appropriate fields and click **OK**.

For examples of how to do this, see "Example 1 – Database Lookup Configuration" on page 168 and "Example 2– Database Lookup Configuration" on page 168.

Property List Listeners

A Property List Listener modifies the behavior of an E-Notebook property list. E-Notebook provides a number of standard property list listeners.

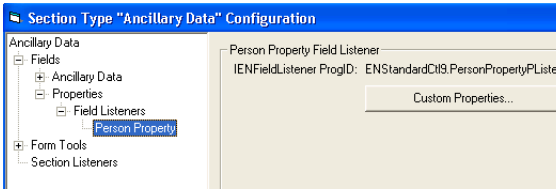
You may also develop your own Property List Listeners to further customize the behavior of property lists in E-Notebook.

To add a property list listener:

1. From the Section Type Configuration dialog, right-click the property list field to which you wish to add the listener.
2. Select **New Field Listener...** from the menu that appears. A dialog appears, prompting you to enter the ProgID for the listener.
3. Enter the ProgID and click the **OK** button. The listener appears in the left frame and you are prompted to rename it.
4. Enter a name for the listener.

To view and edit the properties of the property list listener:

1. Click the listener.The Prog ID and properties button appear to the right.



2. Click the **Custom Properties** button. If the listener has properties associate with it, they are displayed, and may be edited.

THE FORMULA LISTENER

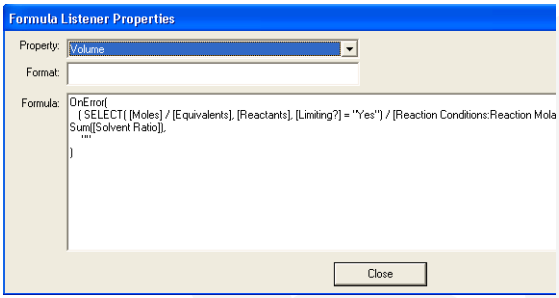
The formula listener makes it possible to perform calculations in a cell using other numerical data in the section and various functions. The listener allows you to specify the target property, the formula, and an optional format.

It is also possible to calculate a value in a property list.

Listener	IENTableListener ProgID
Formula	ENStandardCtl11.FormulaListener

To add a formula for a property:

1. Click the Custom Properties button for the field listener. The Formula Listener Properties dialog appears. The dropdown list at the top of the dialog contains a list of all of the properties in the table.



2. Select the target property that is to be calculated from the dropdown list. The selected property is displayed.
3. Type the formula into the formula box.
4. To reference values in other tables or property lists within the same section, begin and end the reference with square brackets (**[**and**]**), and use colons to denote specific properties. For example, [Reaction Conditions: Reaction Molarity] refers to the Reaction Molarity property in the Reaction Conditions property list.

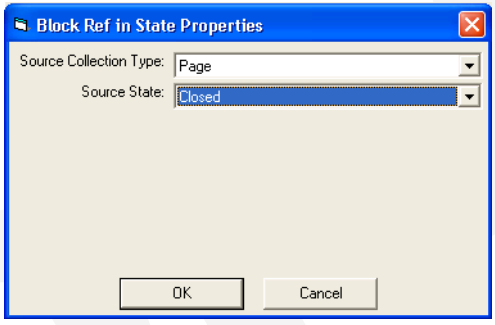
- Standard symbols may be used:
  - **+, -, /, *, =, >, >=, <, <>, <=, &,!,!=,%, +/-**
  - Boolean operators may be used:
  - NOT, AND, OR, XOR
- You may use functions:
  - IF(test, trueValue, [elseTest, elseTrueValue], falseValue): returns one of two values, depending upon whether the test returns True or False.
  - OnError: returns the first argument if it can be calculated without error. If an error would occur in the calculation of the first argument, the second argument is returned (in this example, a blank cell would be returned).
  - SaltWeight(salt code): returns the molecular weight property of the salt with this salt code. The Salt Codes are found in a user's User Configuration folder.
  - SUM(tableproperty): returns the sum of the table cells for the property you specify.
  - SELECT (value, tablefield, condition): allows you to select a value in a table based on a condition, e.g. SELECT ([Moles] * [Equivalents], [Reactants], [Limiting?] = "Yes") returns the value of [Moles] * [Equivalents] from the Reactants table for the limiting reactant.

5. Use the format field to format the numeric value. Operands in a formula are evaluated in the following order:
   - Parentheses
   - NOT
   - *, /,%, &
   - +, -, +/-
   - =, <, <=, >, >=, <>,!=
   - AND
   - OR, XOR
   - Commas are used to separate arguments within functions.
   - Whenever the contents of the section are changed, the formula will be checked, and the target cell will be recalculated if necessary.

THE BLOCK REFERENCE IN STATE PROPERTY LIST LISTENER

The Block Reference In State property list listener may be used to block users from adding a reference to a specific type of collection that is in a particular state. If the listener is configured to block the reference, the user will be unable to add the reference to the property list. For example, you may wish to prevent users from adding references to pages/experiments that are in an archived state.

Property List Listener	IENPropertyListListener ProgID
Block Reference In State	ENStandardCtl11.BlockRefInStatePListener



This property list listener has custom properties associated with it. You must select the collection type and state corresponding to the references that will be blocked. In the example below, a user will be prevented from adding a reference to an “Page” collection that is in the “Closed” state.

Note that you may associate multiple instances of this listener with a property list, if you would like to prevent users from adding references to several different collection types and/or several different states of a collection type.

THE PERSON PROPERTY LIST LISTENER

The Person Property List Listener populates the value of a property with the logged-in user’s name whenever the value of another property is changed.

Listener	Listener ProgID
Person Property	ENStandardCtl11.PersonPropertyPListener

The listener has custom properties associated with it:

Fill in the following information.

- **Source Property** – the property that, when changed, will populate the target property with the logged-in user’s name.
- **Target Field** – the field containing the property that will display the user name or user ID.
- **Target Property** – the property that will display the user name or user ID.
- **Target SQL** – the SQL statement that selects the username or user ID.

In the example shown above, a change to the source property “Checksum” will populate the “Editor” property with the name of the logged-in user.

THE CHEMICAL PROPERTIES PROPERTY LIST LISTENER

The Chemical Properties Property List Listener populates the Molecular Weight and Molecular Formula properties automatically as the drawing in a chemical structure field is changed.

Listener	Listener ProgID
Chemical Properties	ENStandardCtl11.ChemPropertiesCSListener

The following is required in the section type in order to use this listeners.

- A chemical structure field.
- A property list with the following properties: Molecular Weight and Molecular Formula.

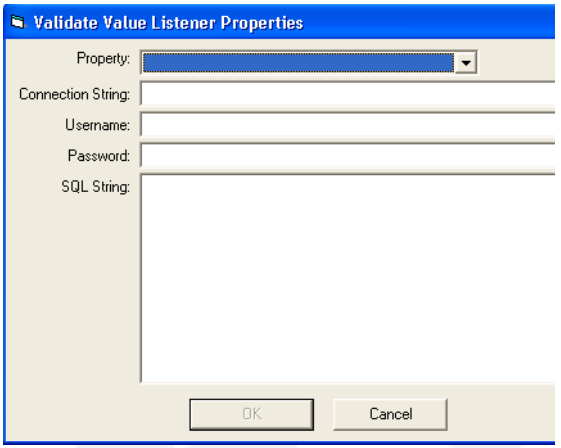
The listener has no custom properties associated with it.

THE VALIDATE VALUE PROPERTY LIST LISTENER

The Validate Value Property List Listener allows you to validate a value in a property list against an external database, to ensure the value entered into E-Notebook is valid. If it is not a valid value, the user will be presented with an error message to that effect.

Property List Listener	IENPropertyListListener ProgID
Validate Value	ENStandardCtl11.ValidateValuePListener

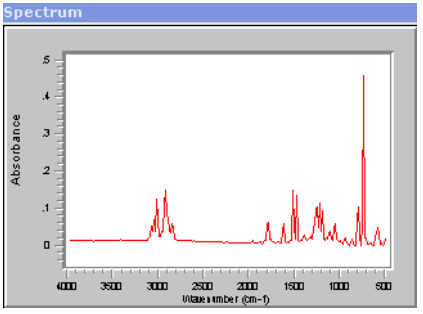
Clicking the **Properties** button after adding the listener to a property list displays the following dialog. Here, you select the property to be validated from the Property dropdown list. Then, enter the database connection information and the SQL string to be used for validating the value.



Spectrum Fields

Spectrum Fields allow users to view and analyze spectrum images.

If you associate the Spectrum Form Tool with a spectrum field, users can import spectrum images of various types. The form tool allows users to copy and export spectrum images as well.



To add a spectrum field:

There seems to be a generic procedure for adding fields of all kinds. Worth scanning for, as it might greatly reduce the length of the doc.

1. In the Collection Tree, right-click the section type to which you wish to add the spectrum field.

2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click, and select **Fields>New Field**. The **Add Field** dialog appears.
4. Type in a name, and select **Spectrum** from the drop-down list of field types.
5. Click **Add**. The new field appears in the list of fields.
6. In order for users to be able to import and export the spectrum images, you must associate the Spectrum Form Tool with the field.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

Stored Document Fields

With Stored Documents Fields, users can associate document files with sections in E-Notebook. For example, a document file may be an MS Excel spreadsheet or a PDF. Although the file cannot be viewed from within E-Notebook, a user can be export it to a selected location, and then open it and view or edit it from there.

An example of a Stored Document Field is shown below.

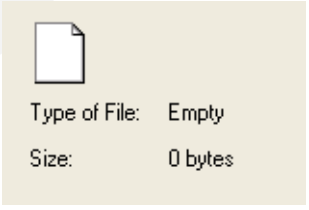


Figure 13.22 stored document field

To add a stored document field:

1. In the Collection tree, right-click the Section Type to which you wish to add the stored document field.
2. Select **Section Type Configuration** from the menu that appears.

   The Section Type Configuration dialog appears.
3. Right-click, and select **Fields>New Field**.

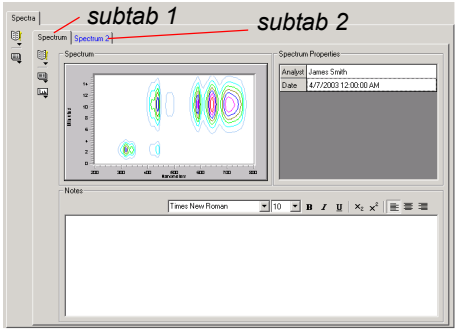
   The **Add Field** dialog appears.
4. Type in a name and select **Stored Document** from the dropdown list of field types.
5. Click **Add**.

   The new field appears in the list of fields.
6. In order for users to be able to import and export the stored documents, you must associate the Active Document Form Tool with the field.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

Subsection Fields

With a subsection field, users may add sections that appear as subtabs. This is one way to keep related sections together in E-Notebook. An example of a subsection field is shown below. In this example, the subsection field contains two spectrum sections, which appear as subtabs.



To add a subsection field:

1. In the Collection Tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click and select **Fields>New Field**. The **Add Field** dialog appears.
4. Enter a name for the field and select **Subsection** from the list of field types.
5. Click **Add**. The new field appears in the list of fields.

Configuring a Subsection Field

Once you have added the field to a form, you may configure it.

1. Right-click within an empty box in the form and select **Set Field** from the box menu.The Insert Field dialog appears.
2. Click the subsection field in the list, and click **Insert**.The subsection field is inserted into the form.
3. Right-click the inner section menu icon, and select **Section Types** from the menu that appears. The Section Types dialog appears
4. Click the sections that a user may add as subsections to this field, and click the **Add** button.
5. Click the **Close** button.The sections you selected may be added as subsections.

Subsection Field Listeners

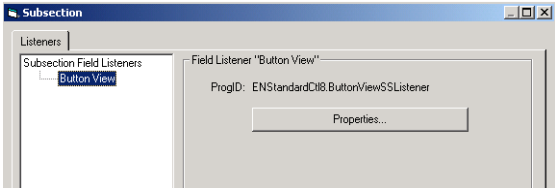
Subsection field listeners are used to modify the behavior of E-Notebook subsections.

E-Notebook provides a standard subsection listener:

- Button View Subsection Field Listener – forces subsections into button view.

To add a subsection field listener:

1. In the Collection Tree, right-click the section type containing the subsection field, and select **Section Type Configuration** from the menu that appears.The Section Type Configuration dialog appears.
2. Right-click the subsection field in the list of Fields, and select **Field Properties** from the menu that appears.The Field Properties dialog appears.
3. Click the **Listeners** tab.
4. Right-click Listeners at the top of the left frame and select **New Field Listener**.The New Field Listener dialog appears.
5. Enter the ProgID for the Field listener and click **OK**. The New Field Listener dialog closes.
6. If the listener has custom properties, click the **Properties** button to configure them.

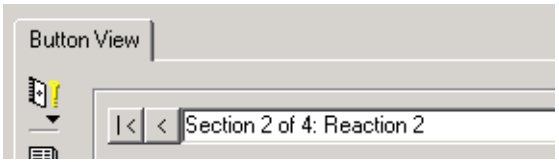


7. Close the properties dialog.

The Button View Subsection Listener

The Button View Subsection Listener forces subsections into button view, as shown below. A user may then scroll through the subsections using the arrow buttons, or right-click a sub-

section name and select **Go To** in order to browse to a specific subsection.



Subsection Listener	IENSubsectionListener ProgID
Button View	ENStandardCtl11.Button-ViewSSListener

The Button View Subsection Listener has no custom properties.

Table Fields

Tables enable users to organize data in an easily interpreted, tabular format. Tables may contain several basic types of data — text data, numerical data, dates, or structures. You may set up tables in different sections in E-Notebook to contain different types of information. You may also associate table listeners with tables to modify their behavior.

See Table 13.1 on page 169 for a description of allowable data types.

You may also configure table properties so that they are read-only, or so that they must contain values before a collection transition is performed.

Another feature of tables is the ability to add references to them. A user who adds a reference to a table may navigate to the referenced collection or section simply by clicking a link in the table cell.

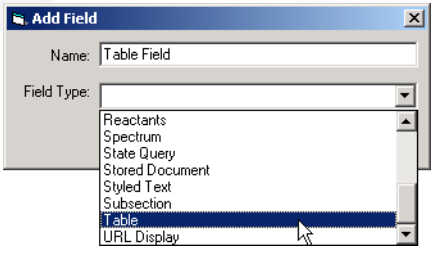
See the following topics for more information about table fields:

- Creating a Table Field
- Managing Enumerated Values in Tables
- Managing Table Listeners
- Managing Units in Property Lists and Tables

Creating a Table Field

This topic provides instructions for adding a table to a section type and configuring the table. To add a table:

1. In the Collection Tree, right-click the section type to which you wish to add the table.
2. Select **Section Type Configuration** from the menu that appears.The Section Type Configuration dialog appears.
3. Right-click, and select **Fields>New Field**. The **Add Field** dialog appears.
4. Enter a name for the field and select **Table** from the list of field types.



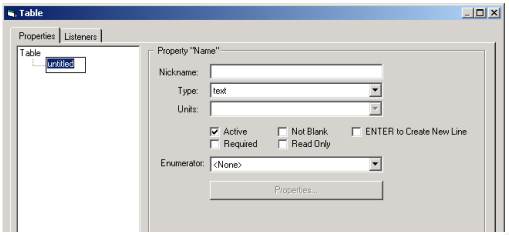
5. Click **Add**. The new field appears in the list of fields.

ADDING A PROPERTY TO THE TABLE:

TIP: The Properties you add to a Table will initially appear as its columns. Once you have added the table to a form, however, you may pivot the table so that the properties appear as rows.

---

1. Right-click the table field in the Section Type Configuration dialog. A menu appears.
2. Select **Field Properties.** The Field Properties dialog appears.
3. Right-click the name of the field and select **New Property** from the menu that appears. A new property appears in the tree. Its attributes appear to the right.



4. Fill in the required fields. For a description of the fields, see "Adding a Property to the Property List" on page 170.

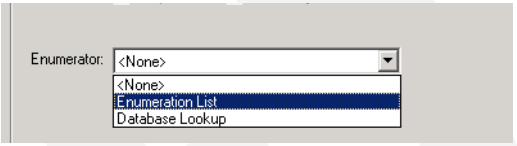
Once you have added a field to the section type, you may add it to the form for the section type. See "Configuring a Form" on page 119 for more information.

Enumerated Values in Tables

You may configure a table property so that it will contain a list of enumerated values. A user may then select one of the values from the list. This list of values may be either manually entered, as described here, or pulled from an external database, as described in "Configuring a Database Table Field" on page 167.

ASSOCIATING A LIST OF MANUALLY ENTERED VALUES WITH A PROPERTY

1. In the Collection Tree, right-click the section type containing the table you wish to configure.
2. Select **Section Type Configuration** from the menu that appears.The Section Type Configuration dialog appears.
3. Right-click the table field in the list of fields, and select **Field Properties** from the menu that appears. The Field Properties dialog appears.
4. Click the property for which you would like to add the list of enumerated values. The attributes of the property appear to the right.
5. Click the drop-down arrow for the **Enumerator**, and select **Enumeration List**.



The Enumerated List Properties dialog appears.

6. Click the **Add Value** button. A blank item appears in the list.
7. Enter a value.
8. Click **Add Value** to add another value, or **OK** to close the dialog. The values you entered will appear in a drop-down list in the table.

EDITING AN ENUMERATED VALUES LIST

1. In the Collection Tree, right-click the section type you wish to configure.
2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click the table field in the list of fields, and select **Field Properties** from the menu that appears. The Field Properties dialog appears.
4. Click the property whose values you wish to edit. The attributes of the property appear to the right. **Enumeration List** is displayed as the type of Enumerator.

5. Click the **Properties** button under the Enumerator. The Enumerated List Properties dialog appears.
6. Click any of the values to edit it, or click **Remove Value** to delete it. To move a value up or down in the list, click the **Move Value Up** or **Move Value Down** button, respectively.
7. Click **OK** to close the dialog.

Table Listeners

Table listeners are used to modify the behavior of E-Notebook tables. E-Notebook provides several standard table listeners.

- Products table listener – is associated with the products table field in the stoichiometry grid of a reaction section.
- Reactants table listener – is associated with the reactants table field in the stoichiometry grid of a reaction section.
- Add reactant
- Block Reference table listener – prevents a user from adding a reference to a specific type of collection that is in a particular state.
- Validate Value Table Listener – validates a value in an E-Notebook table against an external database.
- Analyze Reaction Table Listener – automatically updates reactants and products tables in a stoichiometry grid when a user modifies a reaction drawing.

To add a table listener:

1. In the Collection Tree, right-click the Section Type containing the table, and select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
2. Right-click the table field in the list of fields, and select **Field Properties** from the menu that appears. The Field Properties dialog appears.
3. Click the Listeners tab.
4. Right-click Listeners tab at the top of the left frame and select **New Field Listener**.The New Field Listener dialog appears.
5. Enter the ProgID for the Field listener and click **OK**. The **New Field Listener** dialog closes.
6. If the listener has custom properties, click the **Properties** button to configure them.
7. Close the properties dialog.

THE PRODUCTS TABLE LISTENER

The products table listener calculates and displays properties of products in a stoichiometry grid. The table can be combined with a reactants field (a table field with the reactants table listener) to create a stoichiometry grid. The combination of the stoichiometry grid with a chemical structure field, and the addition of the Reaction Form Tool creates a Reaction Section.

Reaction Sections allow users to draw a reaction in the chemical structure field, and then analyze the reaction, automatically populating the stoichiometry grid with information about the reactants and products. In addition, the Next Step function creates a new page containing the products of the chemical reaction.

Table Listener	IENTableListener ProgID
Products	ENStandardCtl11.ProductsListener

The Products Fixed Limiting Table Listener

This listener is similar to the Products Table Listener. The difference is that the limiting

equivalents cannot vary if the Products Fixed Limiting listener is used. .

Table Listener	IENTableListener ProgID
Products Fixed Limiting	ENStandardCtl11.FixedLimitingEqProducts

THE REACTANTS TABLE LISTENER

The reactants table listener calculates and displays properties of reactants in a stoichiometry grid. The table can be combined with a products field (a table field with the products table listener) to create a stoichiometry grid. The combination of the stoichiometry grid with a chemical structure field, and the addition of the Reaction Form Tool creates a Reaction Section.

Reaction Sections allow users to draw a reaction in the chemical structure field, and then analyze the reaction, automatically populating the stoichiometry grid with information about the reactants and products. In addition, the Next Step function creates a new page or experiment containing the products of the chemical reaction.

Table Listener	IENTableListener ProgID
Reactants	ENStandardCtl11.ReactantsListener

The Reactants Fixed Limiting Table Listener

This listener is similar to the Reactants Table Listener. The difference is that the limiting equivalents cannot vary if the Reactants Fixed Limiting listener is used.

Table Listener	IENTableListener ProgID
Reactants Fixed Limiting	ENReaction11.FixedLimitingEqReactants

THE ADD REACTANT TABLE LISTENER

The Add Reactant Table Listener makes it possible for a user to populate the stoichiometry grid with the properties of a reactant he selects from the Collection Tree. The user does this by right-clicking within the table and selecting Add Reactant from the menu that appears.

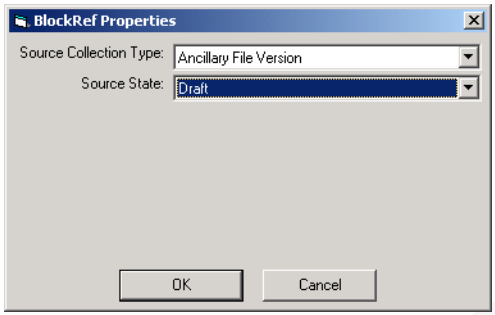
Table Listener	IENTableListener ProgID
Add Reactant	ENReaction11.AddReactantTListener

THE BLOCK REFERENCE IN STATE TABLE LISTENER

The Block Reference In State Table Listener may be used to block users from adding a reference to a specific type of collection that is in a particular state. If the listener is configured to block the reference, the user will be unable to add the reference to the table. For example, you may wish to prevent users from adding table references to pages/experiments that are in an archived state.

Table Listener	IENTableListener ProgID
Block Reference In State	ENStandardCtl11.BlockRefInStateTListener

This table listener has custom properties associated with it. You must select the collection type and state corresponding to the references that will be blocked. In the example below, a user will be prevented from adding a reference to an "Ancillary File Version" collection that is in the "Draft" state.



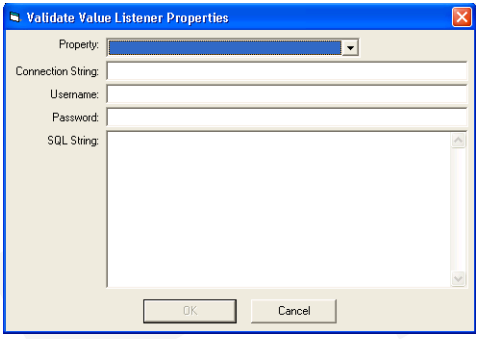
TIP: You may associate multiple instances of this listener with a table, if you would like to prevent users from adding references to several different collection types and/or several different states of a collection type.

THE VALIDATE VALUE TABLE LISTENER

The Validate Value Table Listener allows you to validate a values of a property in a table against an external database, to ensure the values entered into E-Notebook are valid. If a user enters a value that is not valid, he will be presented with an error message to that effect.

Table Listener	IENPropertyListListener ProgID
Validate Value	ENStandardCtl11.ValidateValueTListener

Clicking the **Properties** button after adding the listener to a table displays the following dialog. Here, you select the property to be validated from the Property drop-down list. Then, enter the database connection information and the SQL string to be used for validating the value.



THE ANALYZE REACTION TABLE LISTENER

The Analyze Reaction Table Listener automatically updates the reactants and products tables in a stoichiometry grid when a user edits a reaction drawing. This listener must be associated with both the Reactants table field and the Products table field. In addition, you must associate the Analyze Reaction Chemical Structure Listener with the reaction field.

Active Document Listener	IENActiveDocListener ProgID
Analyze Reaction	ENStandardCtl11.AnalyzeRxnTListener

This listener has no custom properties associated with it.

Related Topics

Table Listeners

The Unique Property Table Listener

The Unique Property Table Listener prevents adding more than one property of the same type to a table.

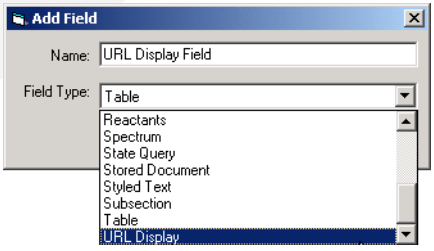
Table Listener	IENPropertyListListener ProgID
Unique Property	ENStandardCtl11.UniquePropertyTListener

URL Display Fields

URL Displays make it possible for users to store URLs within E-Notebook and to display their corresponding content. You may use a URL Display Field for either an internal intranet site or an external webpage.

To create a URL Display field:

1. In the Collection tree, right-click the Section Type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears. The Section Type Configuration dialog appears.
3. Right-click and select **Fields>New Field**. The **Add Field** dialog appears.
4. Enter a name for the Field and select **URL Display** from the list of Field Types.



5. Click **Add**. The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

After you have added the URL Display Field to a form, you may enter a URL and display its corresponding page. Each time a user creates a section of this type, the URL and its content will appear.

To do this:

1. Enter the URL in the address text box. In this example, http://www.cambridgesoft.com was entered.

2. Click the **Go** button to the right of the address.The page corresponding to the URL appears. You may navigate from within the displayed page, if desired.

NOTE: The URL does not change to reflect your navigation. To change the URL that is saved with the section type, type in another address.

Search Fields

Several field types are designed for use exclusively within search forms, to search for data in E-Notebook.

The general procedure for creating each of these fields is the same:

1. In the Collection tree, right-click the section type to which you wish to add the field.

2. Select **Section Type Configuration** from the menu that appears. The **Section Type Configuration** dialog appears.
3. Right-click **Fields>New Field**. The **Add Field** dialog appears.
4. Enter a name for the field and select a field type from the list of field types.
5. Click **Add**.The new field appears in the list of fields.

They are:

- Chemical Query Fields
- Collection Query Fields
- Collection Type Query Fields
- Query Text Fields
- State Query Fields
- Property Query Fields
- Table Query Fields
- Unannotated Version Query Fields
- Search Location Fields
- Join Type Fields

See"Data Fields" on page 162 for information about the other E-Notebook Fields.

Chemical Query Fields

Chemical Query Fields are used in search forms, for finding chemical structures in E-Notebook tables and chemical structure fields.

The search is a substructure search. See the User Guide if you would like more information on structure searching.

To create a Chemical Query Field see the general procedure in See "Search Fields" on page 185:

1. In the Collection tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The Section Type Configuration dialog appears.
3. Right-click and select **Fields>New Field**.

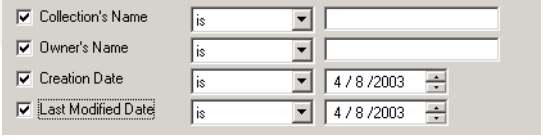
   The **Add Field** dialog appears.
4. Enter a name for the field and select **Chemical Query** from the list of field types.
5. Click **Add**.

   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See "Configuring a Form" on page 119 for more information.

Collection Query Fields

Collection Query Fields are used in search forms, for finding collections that match the metadata criteria that a user specifies.



Users must select each of the criteria they wish to specify for the search.

To create a Collection Query Field see the general procedure in See "Search Fields" on page 185:

1. In the Collection tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The Section Type Configuration dialog appears.
3. Right-click **Fields>New Field**.

   The **Add Field** dialog appears.
4. Enter a name for the field and select **Collection Query** from the list of field types.

5. Click **Add**.

   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

Collection Type Query Fields

Collection Type Query Fields are used in search forms, for specifying the collection type over which a search is run. For example, a user may specify a Page, or an Experiment, so that any other type of collection will not be included in the search results.

Users must select this item in the search form in order to specify it for the search.

To create a Collection Type Query Field see the general procedure in See “Search Fields” on page 185:

1. In the Collection tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The Section Type Configuration dialog appears.
3. Right-click **Fields>New Field**.

   The **Add Field** dialog appears.
4. Enter a name for the field and select **Collection Type Query** from the list of field types.
5. Click **Add**.

   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

Query Text Fields

Query Text Fields are used in search forms. The following fields data in E-Notebook is searched when a user runs a search that contains query text:

- MS Word Fields
- Styled Text Fields
- Property Lists
- Tables
- Text in chemical structure fields
- MS Excel Fields
- Certain types of stored document files - MS Word, MS Excel, MS PowerPoint

To create a Query Text Field see the general procedure in See “Search Fields” on page 185:

1. In the Collection tree, right-click the Section Type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The Section Type Configuration dialog appears.
3. Right-click **Fields>New Field**.

   The **Add Field** dialog appears.
4. Enter a name for the field and select **Query Text** from the list of field types.
5. Click **Add**.

   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

State Query Fields

State Query Fields are used in search forms. They make it possible for a user to specify the state of the collections over which a search is conducted. For example, a user may only want to search for Collections that were in the Closed state as of a particular date.

To create a State Query Field see the general procedure in See "Search Fields" on page 185:

1. In the Collection Tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The **Section Type Configuration** dialog appears.
3. Right-click **Fields>New Field**.

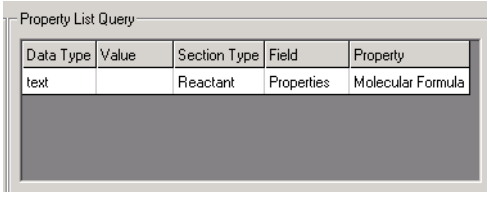
   The **Add Field** dialog appears.
4. Enter a name for the field and select **State Query** from the list of field types.
5. Click **Add**.

   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See "Configuring a Form" on page 119 for more information.

Property Query Fields

Property Query Fields are used in search forms. They make it possible for a users to search for specific properties in E-Notebook property lists. (Note that Table Query Fields are used to search for properties in E-Notebook tables).



To create a Property Query Field see the general procedure in See "Search Fields" on page 185:

1. In the Collection tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The **Section Type Configuration** dialog appears.
3. Right-click **Fields>New Field**.

   The **Add Field** dialog appears.
4. Enter a name for the field and select **Property Query** from the list of field types.
5. Click **Add**.

   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See "Configuring a Form" on page 119 for more information.

Table Query Fields

Table Query Fields are used in search forms. They make it possible for a users to search for specific properties in E-Notebook tables. (Note that Property Query Fields are used to search for properties in E-Notebook property lists).

To create a Table Query Field see the general procedure in See "Search Fields" on page 185:

1. In the Collection tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The **Section Type Configuration** dialog appears.
3. Right-click **Fields>New Field**.

   The **Add Field** dialog appears.
4. Enter a name for the field and select **Table Query** from the list of field types.

5. Click **Add**.

   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

Unannotated Version Query Fields

Unannotated Version Query Fields are used in search forms. They make it possible for a users to search for collections in which changes that required annotation have been made, but for which no annotation has been provided.

To create an Unannotated Version Query Field see the general procedure in See “Search Fields” on page 185:

1. In the Collection tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The **Section Type Configuration** dialog appears.
3. Right-click **Fields>New Field**.

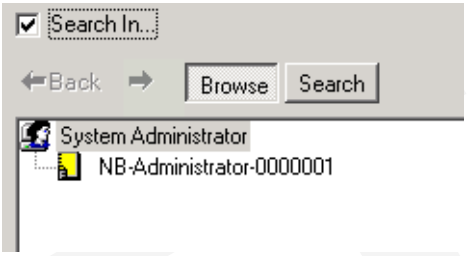
   The **Add Field** dialog appears.
4. Enter a name for the field and select **Unannotated Version Query** from the list of field types.
5. Click **Add**.

   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

Search Location Fields

Search Location Fields are used in search forms. They make it possible for a users to search for collections and sections that exist in a particular branch of the Collection Tree.



To create an Search Location Field see the general procedure in See “Search Fields” on page 185:

1. In the Collection tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The **Section Type Configuration** dialog appears.
3. Right-click **Fields>New Field**.

   The **Add Field** dialog appears.
4. Enter a name for the field and select **Search Location** from the list of field types.
5. Click **Add**.

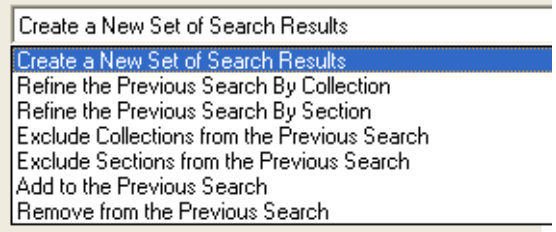
   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

Join Type Fields

Join Type fields are used in search forms. They make it possible for a users conduct a search that is a union of two searches, an intersection of two searches, or a subtraction of one set of

search results from another. A join field is shown below:



To create an join type field see the general procedure in See “Search Fields” on page 185:

1. In the Collection tree, right-click the section type to which you wish to add the field.
2. Select **Section Type Configuration** from the menu that appears.

   The **Section Type Configuration** dialog appears.
3. Right-click **Fields>New Field**.

   The **Add Field** dialog appears.
4. Enter a name for the field and select **Join Type** from the list of field types.
5. Click **Add**.

   The new field appears in the list of fields.

Once you have added a field to the section type, you may add it to the form for the section type. See “Configuring a Form” on page 119 for more information.

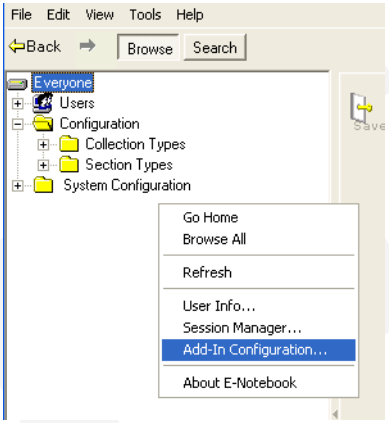
The Add-In Configuration

The Add-In Configuration dialog contains information about the field types that are used as the basis for fields in E-Notebook. E-Notebook provides a number of standard field types, such as Chemical Structure and Table field types, but you can also develop custom field types to manage specialized kinds of data or perform complex tasks.

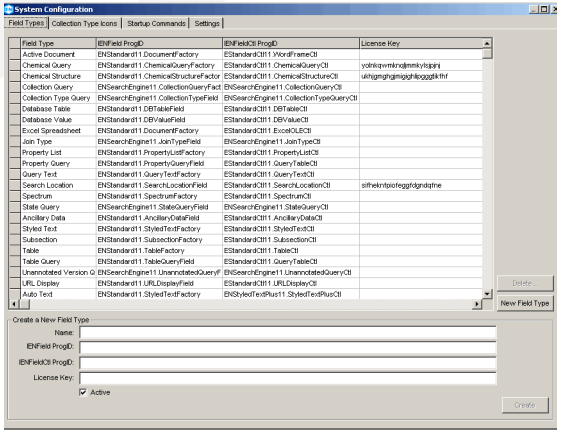
For information about each of the standard types of fields and their properties.

To access the Add-In Configuration and view or edit the E-Notebook field types:

1. Right-click any blank area of the Collection Tree. A menu appears.
2. Select **Add-In Configuration**.



The System Configuration dialog appears.



NOTE: IENField ProgIDs are different in the Enterprise versionof E-Notebook.

3. This dialog displays the following information about each of the Field Types:
   - **Field Type –** the name of the field type.

IENFormTool ProgID – the programmatic identifier that the Windows registry uses to uniquely identify the object that implements the corresponding interface. The format is OleServerName.ObjectName.

- **IENFormToolCtl ProgID** – the programmatic identifier that the Windows registry uses to uniquely identify the object that implements the corresponding interface. The format is OleServerName.ObjectName.
- License Key
- **Active –** an indication of whether new fields of this type may be added to section types.

Changing a Field Type

To change the information for a particular field type:

1. Click the field type in that you wish to edit in the list. The field type is highlighted.
2. Edit any of the information for the field type, changing its name, ProgID's, license key, or active status.
3. Click the **Change** button. Your changes are saved.

Adding a new Field Type

To add a new field type to E-Notebook,

1. From the Add-In Configuration dialog, click the **New Field Type** button.
2. Fill in the following information:
   - Field Type
   - IENFormTool ProgID
   - IENFormToolCtl ProgID
   - **License Key** (if necessary)
   - Active

See "The Add-In Configuration" on page 189 for details on these parameters.

Deleting a Field Type

You may only delete field types that are not in use within E-Notebook section types. To delete a field type,

1. From the Add-In Configuration dialog, click the field type in that you wish to delete. The field type is highlighted.
2. Click the **Delete** button. A message appears, asking you to confirm that you wish to delete the field Type.
3. Click **Yes**.If the field type is not used in an E-Notebook section type, it is deleted. Otherwise, an error message appears, notifying you that the field type is in use and cannot be deleted.

Time Settings

Whenever a date or time is displayed in E-Notebook , it is displayed with a time zone bias from UTC (Coordinated Universal Time). The format of the time zone bias is +HHMM. The plus sign indicates time zones that are east of UTC to the international date line by a specified number of hours and minutes (Paris to Auckland and beyond); a minus sign indicates time zones that are west of UTC to the international date line (Azores to Midway Island, and beyond).

Dates appear in the following locations:

- The history display
- The collection properties dialog box
- The version properties dialog box
- The session manager dialog box
- The properties field type control
- The tables field type control
- The query table field type control
- The collection query field type control

- The state query field type control
- The table of contents

In the history display, the collection properties dialog box, the version properties dialog box and the session manager dialog box, dates are displayed using the time zone of the client machine that generated the date. For example, the time of a version is displayed in the time zone of the user who saved the version; the time of an annotation is displayed in the time zone of the user who created the annotation.

In the properties and tables field type controls, when a user is about to edit a date, the date to be edited is changed to the corresponding time stamp of the editing user's time zone. For example, User A in New Jersey enters a date of June 1, 2004 12:00:00 PM in a date property in a property list. After editing, the date appears as "06-01-2004 12:00:00 PM -0500". User B in New Jersey views the property list with the saved date and the date appears the same. If User B decides to edit the date, then, when the edit controls appear, the edit controls are initialized with the date 06-01-2004 09:00:00 AM. If the user makes no changes, then the value does not change. If the user changes the time to 09:00:01 AM, then the date appears in the property list as "06-01-2004 09:00:01 AM -0800". When user C in London views the date, it will appear as "01-06-2004 09:00:01 AM -0800" because user C's date settings on their client machine specify that days appear before months in short dates.

In the query table field type control, the collection query field type control and the state query field type control, only the date is specified, along with a time zone. When searching, the dates are converted to UTC using the time zone associated with the date. The time zone appears in a popup menu next to the date. In the event of editing a section containing one of these field types, if the stored time zone is different from the time zone of the client machine, the popup menu will contain the time zone of the client machine as well, so that the user can change the query to match the time zone of the client machine.

Queries by date compare the 24 hour period that conforms to the date specified by time zone associated with the query date. For example, if a user in California searches for date properties with a value of "06-01-2004 -0800" then any date property with a value between 06-01-2004 08:00:00 AM +0000 and 06-02-2004 07:59:59 AM +0000 (inclusive) matches that date, wherever it was entered in the world.

In the Table of Contents, only dates appear, with no time zone reference. The date corresponds to the date in the time zone of the generator of the date.

Units in Property Lists and Tables

You may associate measurements with a property in a property list or table. The units may then be specified or displayed in the several units allowed. For a table of allowed units, see "Numerical Units in Tables and Property Lists" on page 201.

Specification of Units

To specify the units for a property in a property list or table:

1. In the Section Type Configuration dialog, right-click the field containing the property whose units you wish to set.
2. Select **Field Properties** from the menu that appears. The properties dialog appears.

3. Click the property in the tree to select it. The attributes of the property are displayed.
4. Select the Type of units from the Type drop-down list. The Units list will be disabled if the Type is text, number, date, or structure. Otherwise, its contents will change to reflect the permitted units for the unit type you have selected. The default selection in the units list will be the first units in the list, which will be ordered as in the table above.
5. Select the default Units from the Units drop-down list. These are the units that will be displayed by default when a user enters only a numerical value into the cell.

Entry of data

When a user enters a value for a property list entry or table cell which has been defined as a type that has units, the text is interpreted as follows:

- Leading and trailing spaces are removed.
- A trailing period, if present, is removed.
- If a hyphen, dash, or minus sign is present and not the first character of the string, the string is deemed to represent a range, and divided into the part before and the part after the first such character. Spaces surrounding the character are discarded. Each string is further interpreted according to the subsequent rules.
- The string is tested iteratively, beginning with the entire string, and truncating one character off the end during each iteration, until a string is found which is determined to be numeric, as defined by the Visual Basic IsNumeric function. If no such leading numeric substring is found, the string is deemed uninterpretable.
- The remaining part of the string after removing the leading numeric substring and any contained spaces is compared against the list of units permitted for this type. If this string is not empty, and a match is not found, the string is deemed uninterpretable.
- If the string was found to consist of a range, and a valid units designation was found only for the second element of the range, that units designation is used for both elements.
- If no units designation is present, then the default units designation is applied.

Note that all measurements described in this topic are stored in an E-Notebook property lists or tables. This topic does not apply to quantities in text fields.

14

User Administration

You can create new users and associate login ID's, passwords, and security properties with them. Security properties determine who has access to a user and the collections that fall under the user in the collection tree.

To streamline user administration, you can create user groups, and then create users who inherit the access privileges that you have assigned to the user groups.

Users and user groups are types of collections and they appear in the Collection Tree. You can manage users and user groups — copying them, referencing them, moving them, etc. — as you would other collections.

See the following topics for more information about users and groups:

Creating a User

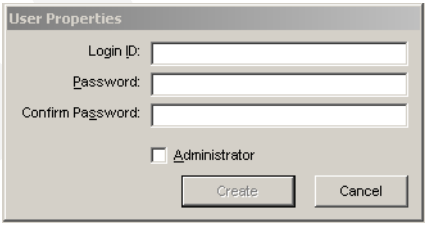
Creating a User Group

Changing a User's Properties

Creating a User

You create a User just as you would create any other collection. Users are often created within User Groups. See "Creating a User Group" on page 195 for more information.

1. Right-click the collection (which may be a User Group) to which you wish to add the User. A menu appears.
2. Select **New>User**. A User is created within the collection you selected. You are prompted to enter a Login ID and select whether the User is a system administrator. (Note: with some systems, you may be prompted to enter a password for the user as well).



3. Once you have created the User, you must assign a geographical region.

The User automatically inherits the security privileges of the User Group (or other container collection) to which he was added. You may disable inherited security and set the access permissions for the User independently. In addition, you may add additional security permissions to the User Collection.

See "Managing Collection Security" on page 195 for more information.

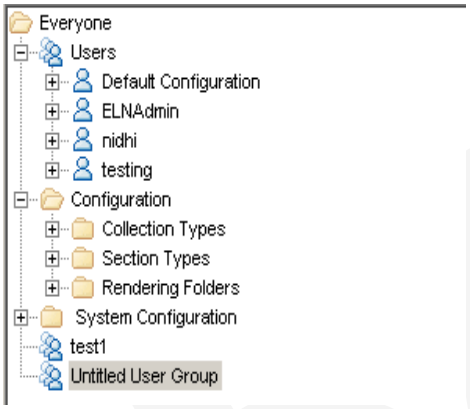
Creating a User Group

You create a User Group just as you would create another collection. You can then add Users to the group, and the Users automatically

inherit the security profile of the group. It is possible to add additional permissions to a User's individual security profile as well.

To create a User Group:

1. Right-click the collection to which you wish to add the User Group. This is often the root collection of E-Notebook. A menu appears.
2. Select **New>User Group**:
   - A User Group is created and you are prompted to give it a name.



Depending upon your configuration, you may add Users to the group by either:

- Adding references to the Users, **or**
- Adding User collections to the User Group directly.

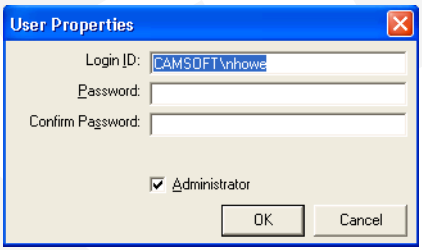
You may then assign security permissions to the User Group, so that all members of the group have access to the collections you specify. See "Managing Collection Security" on page 195 for more information.

Changing a User's Properties

If you are a system administrator, you can change a user's security and login properties.

To change the login ID and/or administrator status of a user:

1. Right-click the user in the Collection Tree. A menu appears.
2. Select **User Info**. The User Properties dialog box appears.
3. You may edit the login ID and password, and select whether or not the user has administrative privileges.



- The Administrator checkbox is only visible if you are a full system administrator.

Changing the Security Properties of a User Collection

You may change the security properties for a User Collection as well, to determine who may view or edit the collections that the user creates. You change the security properties for a user just as you would change the security properties of any other collection. See "Managing Collection Security" on page 195.

15

Managing E-Notebook Security

Security in E-Notebook is set up on a collection basis. Security properties are set up by the administrator. It can be set up for any collection in the Collection Tree — whether it be a User, a Notebook, a Folder, etc. The security properties of a collection determine who has read, write, or full control access to that collection. These access privileges may be assigned to individual users or to user groups.

- **Read** – permission to view the collection, but not edit it.
- **Read and Write** – permission to view the collection and edit it, if it is in a state that permits edits.
- **Full Control** – Read and Write permission, and also the ability to assign and remove security permissions for the collection.

By default, each collection inherits the security properties of its parent in the Collection Tree. The inherited security option may be disabled, however, so that the security properties of a collection can be configured independently of its parent.

In addition to security at the collection level, you may also set up security for collection transitions, specifying which users may or may not perform certain transitions on collections.

In order for you to see who is logged into E-Notebook , there is a Session Management tool. This tool also provides the ability to end the E-Notebook session for a particular user.

See the following topics for more information:

Managing Collection Security

Collection Type Security

Section Type Security

Using the Session Manager

Managing Collection Security

As an Administrator, you may change the access privileges that E-Notebook Users have to specific collections. You may change privileges for collections, collection types, section types, or transitions. Of these, only the procedure for transitions differs from the rest, and will be described below.

The default security for a new collection, collection type, or section type is **Inherits Security**, meaning that a collection has the same security profile as its parent collection in the collection tree. You may disable inherited security if you would like the security profile of a collection to be independent of the security profile of its parent.

To disable inherited security for a collection, collection type, or section type:

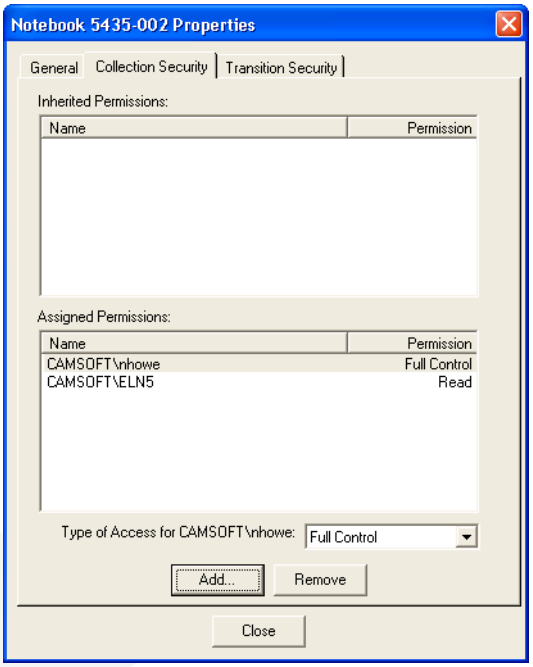
1. Right-click the collection for which you wish to disable inherited security. A menu appears.

2. If **Inherits Security** is checked, select it to clear the checkmark.Inherits Security is disabled.

NOTE: If you disable Inherits Security, the permissions that the collection had inherited will become assigned permissions. You must remove these permissions explicitly if you do not wish these users or groups to have access to the collection.

To configure or change the security properties of a collection, collection type, or section type:

1. Right-click the collection whose security properties you wish to change. A menu appears.
2. Select **Collection Properties**. The Collection Properties dialog box appears.
3. Click the **Collection Security** tab. The Security tab appears. The Groups and Users who have permission to access this item appear in one of the two lists: **Inherited Permissions** or **Assigned Permissions**.



Inherited Permissions are permissions inherited from the parent collection in the collection tree. (These permissions can only be changed by disabling inherited security, as discussed above, or by changing the security profile of the parent collection). Only the Assigned Permissions can be changed from this dialog.

4. Take the appropriate action:

Desired Result	Action to take
Add a User or Group to the list of Assigned Permissions.	1. Click **Add...** The **Choose User or Group** dialog appears. 2. Select the appropriate user or group from the tree. (You may either: **a)** right-click within a blank portion of the tree and select **Browse All** to see all of the Users, or **b)** click the **Search** button and perform a search for a User or group of Users). 3. Click **Add**. 4. Select the appropriate access from the list box: • Read • Read and Write • **Full Control**
Remove a User or Group from the list	1. Highlight the user or group in the list. 2. Click **Remove**.
Change the type of access for a user or group currently in the list.	1. Highlight the user or group in the list of Assigned Permissions. 2. Select the appropriate access from the listbox: • **Read** • **Read and Write** • **Full Control** *NOTE: Note that a user with Full Control permission over his home collection (his user collection) is also able to end his own sessions by using the Session Manager.*

Table 14 Managing Collection security

The definitions of Read, Write, and Full Control differ for collections, collection types, and security types. See the notes in the appropriate sections.

Collection Security

The definition of permissions for Collections are as follows:

- **Read** – permits a user to view the Collection, but not edit it.
- **Read and Write** – permits a user to view and edit the Collection.
- **Full Control** – permits a user to view the Collection, edit it, and assign or remove security permissions for it.

Collection Type Security

The access privileges that you set up for a collection type determine which users may create new collections of this type in the Collection Tree, and which users may modify the configuration of the collection type.

The definition of permissions for Collection types are as follows:

- **Read** – permits a user to create new collections of this type in the Collection Tree. (Note: If a user also has read access to the parent collection of this collection type, he will be able to view the collection type in the collection tree).
- **Read and Write** – permits a user make changes to the configuration and content of the collection type itself. These users may also create new collections of this type in the collection tree.
- **Full Control** – permits a user to view the collection type, modify it, and assign or remove security permissions for it.

Section Type Security

The access privileges that you set up for a section type determine which users may create view or configure modify the section type.

This topic applies only to the security of the section type itself. If a user has access to a particular collection type that contains the section type, it is not necessary for the user to have access to the section type in order to view/create sections within a collection. That is, the privileges you set up for a collection type apply to all of its sections.

The definition of permissions for Section types are as follows:

- **Read** – permits a user to view the section type in the Collection Tree. (Note that the user must also have Read access to the parent collection of a section type in order to view it in the tree).
- **Read and Write** – permits a user make changes to the to the configuration of the section type.
- **Full Control** – permits a user to view the section type, modify it, and assign or remove security permissions for it.

Transition Security

Transition Security is the security applied to the collection transitions. For example, some users may be allowed to close a collection while others can also reopen the collection.

To change the Transition Security Properties of a collection:

1. Right-click the collection whose Security Properties you wish to change. A menu appears.
2. Select **Collection Properties**. The Collection Properties dialog box appears.
3. Click the **Transition Security** tab. The Security tab appears. The groups and users who have permission to apply a transition to this item appear in one of the two lists: Inherited Permissions, Assigned Permissions. Only the Assigned Permissions can be changed from this dialog.

4. Take the appropriate action:

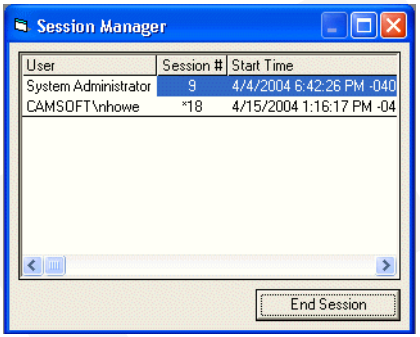
Desired Result	Action to take
Add a User or Group to the list of Assigned Permissions.	1. Click **Add...** The Choose User or Group dialog appears. 2. Select the appropriate user or group from the tree. (You may either **1)** right-click within a blank portion of the tree and select **Browse All** to see all of the Users, or **2)** click the **Search** button and perform a search for a User or group of Users). 3. Click **Add**. The Choose Transition Types dialog appears. 4. Select the appropriate transition type(s). 5. Click **Add**. The User or Group appears in the Assigned Permissions list, along with the transition type(s) you selected.
Remove a User or Group from the list.	• Click **Remove**.

Using the Session Manager

The Session Manager makes it possible for you to see who is logged in to E-Notebook at any given time. This tool also provides the ability to end the E-Notebook session for a particular user. You may want to end a user's session if the user has locked a collection for editing and another user must access the collection.

To access the Session Manager:

1. Right-click within a blank portion of the Collection Tree. A menu appears.
2. Select **Session Manager...**. The Session Manager appears.



This dialog shows the Users, Session numbers, and Start Times for each current session.

Ending a Session

If you wish to end a particular user's session, you may do so. To end a session:

1. Click the session in the list.The session is highlighted.
2. Click **End Session**.A message appears, asking you to confirm that you wish to end the session.
3. Click **Yes**.The session is ended. The user must log into E-Notebook again.

NOTE: A user with Full Control permission over his home collection (his user collection) may use the Session Manager to end his own sessions.

A

E-Notebook

This chapter contains general information about E-Notebook.

Viewing User Information

You can see specific information about the user who is currently logged into E-Notebook.

To do this:

1. Click the **Browse** button.
2. Right-click any blank area in the Collections Tree. A menu appears.
3. Select **User Info...**.The User Properties dialog box appears. It contains the following information:
   - **Login ID** – the Login ID of the user who is currently logged into E-Notebook.
   - **Password** – Depending upon the type of login authentication your system uses, this field may be used to change the password for the logged-in user.
   - **Administrator** – a checkbox that indicates whether the user has administrative privileges. Note: this checkbox is only visible if the logged-in user is an administrator.

Refreshing E-Notebook

If other users add information to E-Notebook, you may need to refresh your view of E-Notebook so that you can see their changes. To refresh E-Notebook:

1. Click the **Browse** button. The Collection Tree appears.
2. Right-click any blank area in the Collections Tree. A menu appears.
3. Select **Refresh**. E-Notebook information is updated.

Numerical Units in Tables and Property Lists

Tables and property list may contain numerical properties, which may have default units associated with them. Your system configuration determines the default units for any given property in a table. The following types of measurements may be specified or displayed in the permitted units shown below.

For example, there may be a property of "mass" and its default units may be grams (g). If you enter a numerical value into the property without specifying units, the units will be displayed and stored as grams. You may also enter any of the permitted mass units shown below, such as mg or kg. Note that in all cases, the standard units are the SI units for the given

type, which may not be the units commonly entered or displayed.

Type of Measurement	Standard Units	Permitted Units
density	kg/m3	g/ml µg/ml mg/ml µg/l mg/l g/l kg/l kg/m3
length	m	m Å nm µm mm cm
mass	kg	g µg mg kg
molality (quantity per mass of solvent or substrate)	mol/kg	mol/kg mol/g mmol/kg mmol/g µmol/kg µmol/g
molar mass	kg/mol	g/mol kg/mol dalton D kD
molarity (quantity per volume of solution)	mol/m3	mol/l µmolar mmolar molar
moles (quantity of substance)	mol	mmol µmol mol
normality (ion equivalents per volume of solution)	mol/m3	N mN µN
pressure	Pa	atm Pa kPa torr bar mbar
temperature	K	°C °K °F
time	s	s ms µs min hr
velocity	m/s	m/s km/hr mi/hr

Table 1 Numerical units

Table 1 Numerical units

Type of Measurement	Standard Units	Permitted Units
volume	m3	ml µl l m3

Table 1 Numerical units

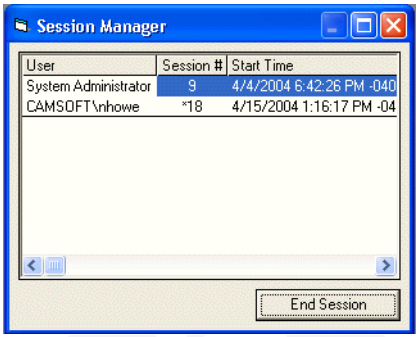
When you are in Search mode, the table or property query field allows you to find all equivalent values entered in various units that share the same unit type. For example, a search for a volume of “500 mL” will return both “500 mL” and “0.5L”. The search will assume the default units for the property if you do not enter units. Using the same example, if mL were the default unit for a volume property, and a search were conducted for a property value of “0.5”, no hits would be returned. A search for “0.5 L” would return both “500 mL” and “0.5 L”.

Using the Session Manager

In certain situations an E-Notebook session may be left open. With the Session Manager, you can end your old session, and release any collection that may be locked by it.

To access the Session Manager:

1. Right-click any blank area in the Collections Tree. A menu appears:
2. Click **Session Manager...**.The Session Manager appears.



This dialog shows the Users, Session numbers, and Start Times for each current session.

Ending a Session

If you wish to end a session displayed in the Session Manager:

1. Click the session in the list. The session is highlighted.
2. Click the **End Session** button. A message appears, asking you to confirm that you wish to end the session.
3. Click **Yes**. The session is ended. Any record that was locked by the session is released.

NOTE: You must have Full Control permission over your home collection (your user collection) to end your sessions.

B

E-Notebook Batch Import Facility

The batch import facility in E-Notebook provides for a means to import a partial or complete configuration in a single menu command. This process is controlled by an import script called the **Batch File**, which is an xml file adhering to the schema described in this document. The Batch File typically refers to additional files, either E-Notebook content files created with the Export command (called **Content Files**) or subsidiary batch files. This process is initiated by selecting a collection in the E-Notebook collection tree (which will be referred to as the **Parent Collection**) and choosing the **Import** command.

<batch>

The root element must be a <batch>. There are no attributes defined for the batch element. A batch may contain zero or more of any of the following elements, interspersed in any order, except as dictated by the dependencies between the imported collection and section types.

- <log>
- <alert>
- <refresh>
- <import>

<import>

The import element causes a single file to be imported. This file may contain any content, including section types, collection types, collections, or sections. There are no attributes defined for the import element. Each import element may contain a element, if none is specified, the target is the parent collection. Each import element must contain a element.

<target>

The target element describes where in the E-Notebook collection hierarchy the imported content is to be placed. This element must contain one of the following elements, depending on what sort of content is being imported:

- <collectionType>
- <childReference>

<collectionType>

A collectionType element indicates that the relationships for a previously imported collection type are to be imported. The name attribute specifies the name of the collection type for which relationships are to be imported, and the collectionType element must include a collection element which specifies by position the first (and only) collection which defines that collection type. For example:

```
<import>
   <target><collectionType name="Binder">
   <collection position="1"/></collection-
Type>
   </target>
   <source>Collection Types/Binder.xml
   </source>
</import>
```

<childReference>

A <childReference> indicates a reference to a collection contained within the Parent Collection. This element must contain a name or position attribute, but is invariably used with a name. For example, this may be used to create a grandchild of the Parent Collection, as follows:

```
<import>
  <source>Section Types.xml</source>
 </import>
<import>
   <target><childReference name="Section
Types"/>
   </target>
   <source>General Information.xml</source>
</import>
```

Assuming “Section Types.xml” describes a collection named “Section Types” and that “General Information.xml” describes a section type, this <import> will create a “Section Types” collection, and within that, a General Information section type.

The E-Notebook collection hierarchy distinguishes between the nodes, called “collections”, and the links between the nodes, called “references”. Every reference has one container collection and one target collection, and a collection may be referred to as the target of any number of references. Thus, the <childReference> describes a reference, but if a <target> specifies a reference, it is assumed that the target is the reference’s target collection. A <childReference> may contain a <targetCollection> element explicitly to indicate that the target is the collection, not the reference, but this is optional unless one wishes to further specify a collection contained within this collection. For example, to specify deeper levels in the collection hierarchy, one might use:

```
<import>
 <target>
  <childReference name="Some Folder">
   <targetCollection>
    <childReference name="Another Folder"/
>
   </targetCollection>
  </childReference>
 </target>
 <source>Deeper Folder.xml</source>
</import>
```

<source>

The source element contains text which specifies the path of the file to be imported. This is interpreted relative to the batch file.

<log>

The log element contains text which is written to the client log file, if logging is enabled. If logging is not enabled, this element is ignored. Example:

```
<log>General Information section type created
</log>
```

<alert>

The alert element causes a message to be displayed. This element must contain the text to be displayed, and may have a title attribute which specifies the title of the message box, and may have a buttons attribute which may be 0 or 1. If the buttons attribute is 0 or not specified, the message box will have an OK button only. If the buttons attribute is 1, the message box will have OK and Cancel, and if Cancel is pressed, the import process will stop.

<refresh>

The refresh element causes the client to refresh the display of section and collection type information to show the effect of any imported objects. One commonly uses a refresh element at the end of the import script.

C

Summary of the Standard Add-Ins

This topic summarizes the functions of all the standard E-Notebook add-ins — listeners, field types, and form tools — that you may use to configure E-Notebook.

Collection Listeners

Collection listeners are used to modify the behaviors of collections — such as the creating, hiding, renaming, duplicating and moving behaviors.

- Audit Collection Listener – prevents the user from deleting a collection if the collection has been modified since it was created.
- Auto Number Collection Listener – allows the administrator to specify a customized numbering scheme for a Collection Type.
- Change Display Collection Listener – enables Visual Display of Changes when a user creates a particular type of collection.
- Clear Value Collection Listener – clears specified properties in tables or property list fields when a collection is duplicated.
- Database Procedure Collection Listener – executes a database procedure during an operation on a collection.
- Fixed Name Collection Listener – prevents the user from renaming collections.
- Owner Full Control – provides the user with Full Control permission for this type of collection when he/she is the owner.
- Parent Prefix Collection Listener – ensures that when collection is renamed, any contained collection that has a name generated by the Auto Number listener has the correct prefix if the name of the parent collection changes.
- Prevent Delete when Referenced Collection Listener – prevents users from deleting this type of collection when it is referenced from another collection.
- Prevent Reference Copy – prevents users from copying collections that contain references to specific types of collections that are in specific states.
- Refresh Database Table Privilege Change Collection Listener – used to refresh the contents of a database table when the privileges associated with a collection change.
- Section List Collection Listener – caches a list of sections in a collection on the E-Notebook client.
- Security Collection Listener – allows you to assign security privileges to a collection when it is created.
- User Collection Listener – when a User is created, this listener displays a dialog box

for key information that must be entered, such as login ID.

Transition Listeners

Transition listeners are used to perform a certain function that is associated with a transition from one state of a collection to another.

- Annotate Transition Listener – prompts the user for an annotation that is associated with the transition.
- Change Display Transition Listener – enables Visual Display of Changes when the transition is performed.
- Change Security Transition Listener – enables Inherits Security for a collection during a transition.
- Confirm Transition Transition Listener – a user to confirm a specific transition prior to the transition occurring.
- Export Transition Listener – exports the contents of a collection as part of a transition.
- Locked Container Transition Listener – checks to ensure that the container of the collection is in a state which permits full control over the contents of the container.
- Print Transition Listener – prints the contents of a collection as part of a transition.
- Required Non-blank Properties Transition Listener – prevents a transition from occurring if specific properties are not filled in.
- Required Rows Transition Listener – prevents a transition from occurring if specific rows are missing from a table.
- Required Properties Transition Listener – checks to ensure that the contents of the property list and tables meet the configured Required or Not Blank option. If they do not, then the transition will not be completed
- Unlocked Contents Transition Listener – checks to ensure that the collections contained within a collection are all locked before the container collection can transition into a locked state.

Section Listeners

E-Notebook provides a number of standard Section Listeners, which may be used to modify the behavior of sections:

- Audit Section Listener – prevents a user from deleting the section only if it has been modified since it was created.
- Clear Value Section Listener – clears specified values when a user duplicates a section.
- Fixed Section Name Listener – prevents the user from renaming the section.
- New Name Section Listener – prompts a user to enter a name for a section when it is created.
- Required Section Listener – prevents the user from deleting the section at any time.
- Unduplicatable Section Listener – prevents certain sections from being copied when a user copies the collection that contains them.

Form Tools

E-Notebook provides a number of standard form tools, which may be associated with section types to perform certain functions:

- Active Document (Import/Export) Form Tool – allows the import and export of MS Word and other stored documents.

- Character Map Form Tool – allows a user to enter Unicode characters into a text field, property list, or table.
- Import Image Form Tool – allows a user import a standard image file as a PDF.
- Insert/Export Form Tool – to insert and export MS Word documents.
- Insert Reference Form Tool – allows a user to reference to a specific collection type in a target property of a property list.
- Load Query Form Tool – allows the user to copy the contents of the currently selected query into the query panel, to conduct a search.
- New Subsection Form Tool – creates a new subsection when clicked.
- Next Step Form Tool – creates a new collection with a reaction section containing the products of the selected reaction.
- Spectrum Form Tool – enables the import of various spectra files, and allows users to copy, paste, import, and export those files.
- Word Link Form Tool – allows a user to create a link from an MS Word document to a section or collection in E-Notebook.

Collection Type Form Tools

- Duplicate Collection Form Tool – allows a user to create a copy of the collection.
- New Child Collection Form Tool – creates a new collection within the selected collection. For example, the tool may be used to created a new page within a notebook.
- New Section Form Tool – allows a user to associate a new section with a collection.

Search Engines

Three standard search engines may be used:

- Chemical Structure Search Engine – used to perform searches for chemical structures. The results are organized by substructure.
- Collection Search Engine – used to search for collections, based on their metadata.
- Section Search Engine – used to perform searches for sections and match criteria specified in the a variety of field types.

Field Types

The following field types are designed for use in data forms, for data entry, analysis, and display:

- Active Document Fields – allow users to view and edit MS Word documents within E-Notebook sections.
- Chemical Structure Fields – make it possible for users to draw or import drawings of chemical structures and reactions. These fields make use of the ChemDraw ActiveX Control, and may also be used for standard image files, such as GIFs and JPEGs.
- Database Table Fields – display the results of a SQL SELECT statement (represented as an ADO recordset).
- Excel OLE Control Fields – make it possible for users to embed Microsoft Excel documents in E-Notebook sections
- Property List Fields – are used in forms to record various types of data properties. Several datatypes are supported.
- Spectrum Fields – allow users to view and analyze spectrum images.
- Stored Document Fields – allow users to associate document files — such as PDFs or PowerPoint files — with sections in E-Notebook.

- Styled Text Fields – allow users to enter rich text.
- Subsection Fields – allow users to add sections that appear as subtabs.
- Table Fields – enable users to organize data in an easily interpreted, tabular format. Several datatypes are supported.
- URL Display Fields – make it possible for users to store URLs within E-Notebook and to display their corresponding content.

Several fields types are designed for use exclusively within search forms, to search for data in E-Notebook . They are:

- Chemical Query Fields – used for finding chemical structures in E-Notebook tables and chemical structure fields.
- Collection Query Fields – used for finding collections that match the metadata criteria that a user specifies.
- Collection Type Query Fields – used for specifying the collection type over which a search is run.
- Query Text Fields – used for finding text that occurs in several types of E-Notebook fields.
- State Query Fields – used to specify the state of the collections over which a search is conducted.
- Property Query Fields – used for finding specific properties in E-Notebook property lists.
- Table Query Fields – used for finding specific properties in E-Notebook tables.
- Unannotated Version Query Fields – used for finding collections in which changes that required annotation have been made, but for which no annotation has been provided
- Search Location Fields – used to specify the branch of the collection tree over which the search is to be run.

Field Listeners

Field listeners may be associated with fields to modify their behavior.

- Generic Field Listeners – can be applied to any field type:
- Block User Edit Field Listener – makes a particular field read-only to users.
- Active Document Field Listeners:
  - Analyze Reaction Chemical Structure Listener – automatically updates reactants and products tables in a stoichiometry grid when a user modifies the reaction drawing.
  - Prevent External Link Active Document Listener – may be associated with an Active Document field to prevent users from linking to external URLs.
- Chemical Structure Field Listeners:
  - Analyze Reaction Chemical Structure Listener – updates a stoichiometry grid when a user edits a reaction
  - Chemical Property Chemical Structure Listener – Calculates chemical structure properties of molecular weight and molecular formula, and inserts them into a property list when the contents of the chemical structure change.
- MS Excel Field Listeners:
  - Break External Links Listener – notifies the user the external link in MS Excel files stored in E-Notebook will be broken.
  - Hide Add-Ins Listener – allows the user to disable add-ins associated with MS Excel in E-Notebook.

- Remove Macros Listener – allows the user to disable add-ins associated with MS Excel in E-Notebook.

- Property List Listeners
  - Block Reference In State Property List Listener – prevents a user from adding a reference to a particular type of collection that is in a particular state.
  - Person Property List Listener – populates the value of a property with the logged-in user's name whenever the value of another property is changed.
  - Chemical Properties Property List Listener – populates the Molecular Weight and Molecular Formula properties automatically as the drawing in a chemical structure field is changed.
  - Formula listener – allows you to associate a formula with a cell in a property list, and display the returned value in the cell.
  - Validate Value Property List Listener – validates a value in an E-Notebook property list against an external database.
- Table Listeners:
  - Add Reactant table listener – makes it possible for a user to populate the stoichiometry grid with the properties of a reactant he selects from the Collection Tree.
  - Analyze Reaction Table Listener – automatically updates reactants and products tables in a stoichiometry grid when a user modifies a reaction drawing.
  - Block Reference table listener – prevents a user from adding a reference to a specific type of collection that is in a particular state.
  - Formula listener – allows you to associate a formula with a table cell, and display the returned value in the cell.
  - Products table listener – is associated with the products table field in the stoichiometry grid of a reaction section.
  - Products Fixed Limiting table listener – same as the Products listener, but the limiting equivalents cannot vary.
  - Reactants table listener – is associated with the reactants table field in the stoichiometry grid of a reaction section.
  - Reactants Fixed Limiting table listener – same as the Reactants listener, but the limiting equivalents cannot vary.
  - Validate Value Table Listener – validates a value in an E-Notebook table against an external database.
  - Unique Property Table Listener – prevents adding more than one property of the same type to a table.
- Subsection Listeners:
  - Button View Subsection Field Listener – forces subsections into button view (as opposed to the standard tab view).
  - Hide Tools Subsection Listener – hides the form tool area of a subsection for more efficient screen usage.

D

Glossary

Terminology

The following terminology is used in the E-Notebook application and throughout this guide:

Collection. – A set of related items in E-Notebook .Collections are the items that appear in the E-Notebook Collection Tree.

Collection Listener. – Collection Listeners is a behavior that modifies the behavior of collections, such as creating, hiding, renaming, duplicating and moving behaviors. Administrators assign them to collections.

Collection Type. – A collection type defines the properties of a collection. Each collection type has a name, an icon for displaying collections of that type in the collection hierarchy and a set of business rules that describe what kinds of operations can be performed on collections of that type.

Field. – Fields are the basis for the forms in E-Notebook. Each field is based on an add-in field type. Each field has a type, which describes the type of data stored in the field, and a name. Examples of different types of fields include a property list, a table, a chemical structure, a spectrum, a Microsoft Word document. Depending on the type of data stored in the field, the field may also contain additional configuration information. For example, a property list field contains a list of the properties that can be included in the property list.

Form. – It is a layout which contains Fields, Boxes, and possible Form Tools. The term Form is assiocated with a Section. When you click on a Section type you can see the layout of a Form.

Form Tool. – a Form Tool is used to perform particular function in an E-Notebook section, such as data analysis or data import/export.

Full Control privilege. – The privilege required to manage the security settings of a collection. The Full Control privilege includes all of the features associated with the Read & Write privilege

History. – A list of the versions and transitions that have been made to a collection.

Home. – The collection that appears when you first log in to E-Notebook. It is the collection associated with you as a user.

Meta-data. – Data that describes other data. For example, you can use meta-data such as creation date or owner's name as parameters when searching for data and information in E-Notebook.

Owner, of a Collection. – the E-Notebook user who created the collection.

Property List. – A list of data properties corresponding to a particular section. For example, the property list in a reaction section may contain pressure, temperature, etc.

Read privilege. – The privilege required to view a collection in the collection tree, along with its contents.

Read & Write privilege. – The privilege required to modify the contents of a collection. The Read & Write privilege subsumes all of the features associated with the Read privilege.

Region. A geographic area where each user is associated with his home collection in E-Notebook. The regional setting determines which collection type print templates will be used when the user exports to MS Word or prints.

Table. – A section (or part of a section) in which you can record data in a tabular format.

Template. – A collection containing data or information that you wish to reuse multiple times. You can use the template as the basis for new collections.

Section. – A set of data. Each piece of datum is described by a field. For example, a reaction section might contain a chemical structure drawing, a table of reactants, a table of solvents, a table of products and a description of the procedure used to create the drawing.

Section Listener. – Section Listeners is a behavior that modify the behavior of sections, such as renaming and moving behaviors. Administrators assign Section Listeners to various types of sections.

Section Type. – A configuration that contains a set of fields, form tools and a form. You can associate section listeners with a section type to implement business rules associated with sections of this type.

Transition. – Are the actions performed to move a collection from one state to another.

Transition Listener. – Transition Listeners modify the effect of a transition, usually by performing an operation that is associated with the transition. System administrators configure Transition Listeners.

Version. – The contents of a collection saved at a particular time.

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