For most work, single precision waves are appropriate.

Single precision waves take up half the memory and disk space of double precision. With the exception of the FFT and some special purpose operations, Igor uses double precision for calculations regardless of the numeric precision of the source wave. However, the narrower dynamic range and smaller precision of single precision is not appropriate for all data. If you are not familiar with numeric errors due to limited range and precision, it is safer to use double precision for analysis.

Integer waves are intended for data acquisition purposes and are not intended for use in analysis. See **Integer Waves** on page II-85 for details.

Default Wave Properties

When you create a wave using the **Make** operation (see page V-526) operation with no optional flags, it has the following default properties.

Property	Default
Number of points	128
Data type	Real, single-precision floating point
X scaling	x0=0, dx=1 (point scaling)
X units	Blank
Data units	Blank

These are the key wave properties. For a comprehensive list of properties, see **Wave Properties** on page II-88.

If you make a wave by loading it from a file or by typing in a table, it has the same default properties except for the number of points.

However you make waves, if they represent waveforms as opposed to XY pairs, you should use the Change Wave Scaling dialog to set their X scaling and units.

Make Operation

Most of the time you will probably make waves by loading data from a file (see **Importing Data** on page II-126), by entering it in a table (see **Using a Table to Create New Waves** on page II-239), or by duplicating existing waves (see **Duplicate Operation** on page II-70).

The **Make** operation is used for making new waves. See the **Make** operation (see page V-526) for additional details.

Here are some reasons to use Make:
- To make waves to play around with.
- For plotting mathematical functions.
- To hold the output of analysis operations.
- To hold miscellaneous data, such as the parameters used in a curve fit or temporary results within an Igor procedure.

The Make Waves dialog provides an interface to the **Make** operation. To use it, choose Make Waves from the Data menu.

Waves have a definite number of points. Unlike a spreadsheet program which automatically ignores blank cells at the end of a column, there is no such thing as an "unused point" in Igor. You can change the number of points in a wave using the Redimension Waves dialog or the **Redimension** operation (see page V-788).