cansas1d definition of terms

From canSAS

Definition of terms

Note:

- Each term (element or attribute) is listed by its XPath (http://cs:www.w3schools.com/cs:xpath/) in the XML file. The `cs:` prefix refers to the `xmlns` namespace attribute listed in the XML header.
- Elements are shown below sorted by their XPath. In the XML file, the order of elements is defined by the XML Schema. An example is given in the file: cansas1d-template.xml
- Each term in the standard is shown with a comment embedded.
- The comment indicates
  - the name of the element,
  - how many times the element can be used,
    - [0..1] : element is optional but can only appear once within enclosing element
    - [1..1] : element is required and can only appear once within enclosing element
    - [1..inf] : element is required but can appear as many times as needed within enclosing element
    - [0..inf] : element is optional and can appear as many times as needed within enclosing element
    - [] : element is optional, number of appearances within enclosing element is not specified
  - and a short description.
- When shown in the template below with the "/@unit" XPath, the "unit" attribute is required.

`/cs:SASroot`

[1..1] The canSAS reduced 1-D SAS data will be in the SASroot database. This is similar to NXroot used by NeXus.

`/cs:SASroot/@version`

[1..1] version="1.0" Required attribute to indicate the version of the standard to which this XML document is encoded.

`/cs:SASroot/cs:SASentry`

[1..] A single SAS scan is reported in a SASentry. A SASentry can use the optional "name" attribute to provide a string for this SASentry. Use of this string is not defined by this standard.

`/cs:SASroot/cs:SASentry/@name`

[0..1] Optional string attribute to identify this particular SASentry.

`/cs:SASroot/cs:SASentry/<any>`

[0..inf] Provision at this point for any element to be entered that is not part of the canSAS standard. Use a **xmlns="some-simple-identification-string"** to identify that this is a *foreign element.*

`/cs:SASroot/cs:SASentry/cs:Run`

[1..inf] Run identification for this SASentry. For many facilities, this is an integer. Use multiple instances of Run as needed. Note: How to correlate this with SASinstrument configurations has not yet been defined.

`/cs:SASroot/cs:SASentry/cs:Run/@name`

[0..1] Optional string attribute to identify this particular SASrun. Use this to associate (correlate) multiple SASdata elements with Run elements. (Give them the same name.)

`/cs:SASroot/cs:SASentry/cs:SASdata`

[1..inf] Reduced 1-D SAS data for this SASentry. Use multiple SASdata elements to represent multiple frames. Use this to associate (correlate) multiple SASdata elements with Run elements. (Give them the same name.)

`/cs:SASroot/cs:SASentry/cs:SASdata/@name`

[0..1] Optional string attribute to identify this particular SASdata.

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata`

[1..inf] Idata describes a single SAS data point.

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:dQl`

[0..1] Q resolution perpendicular to the axis of scanning (the low-resolution *slit length* direction).

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:dQl/@unit`

[1..1] Required unit for dQl. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:dQw`

[0..1] Q resolution along the axis of scanning (the high-resolution *slit width* direction).

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:dQw/@unit`

[1..1] Required unit for dQw. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:I`

[1..1] Intensity of the detected radiation.

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:I/@unit`

[1..1] Required unit for I. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:Idev`

[0..1] Estimated standard deviation of I. Must specify the unit as an attribute.

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:Idev/@unit`

[1..1] Required unit for Idev. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:Q`

[1..1] Q = (4 pi / lambda) sin(theta) where lambda is the wavelength of the radiation and 2theta is the angle through which the detected radiation has been scattered.

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:Q/@unit`

[1..1] Required unit for Q. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:Qdev`

[0..1] Estimated standard deviation of Q. Must specify the unit as an attribute.

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:Qdev/@unit`

[1..1] Required unit for Qdev. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:Qmean`

[0..1] Mean value of Q for this datum. Must specify the unit as an attribute.

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:Qmean/@unit`

[1..1] Required unit for Qmean. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/cs:Shadowfactor`

[0..1] Describes the adjustment due to the beam stop penumbra. (This definition needs revision. NIST?) NOTE: There is no "unit" attribute.

`/cs:SASroot/cs:SASentry/cs:SASdata/cs:Idata/<any>`

[0..inf] Provision at this point for any element to be entered that is not part of the canSAS standard. Use a **xmlns="some-simple-identification-string"** to identify that this is a *foreign element.*

`/cs:SASroot/cs:SASentry/cs:SASinstrument`

[1..1] Description of the instrument.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:name`

[1..1] Name of the instrument.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation`

[1..inf] Description of the instrument collimation.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/@name`
[0..1] Optional text to describe this collimation element.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture`
[0..inf] Slit or aperture.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/@name`
[0..1] Optional name for this aperture.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/@type`
[1..1] Optional text to describe the type aperture (pinhole, 4-blade slit, Soller slit, ...).

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:distance`
[0..1] Distance from this collimation element to the sample.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:distance/@unit`
[1..1] distance requires a unit to be specified. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:size`
[0..1] Opening dimensions of this aperture.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:size/@name`
[1..1] Optional attribute to clarify the name of this beam size.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:size/cs:x`
[0..1] Dimension of the aperture in X.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:size/cs:x/@unit`
[1..1] Required unit for the dimension of x. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:size/cs:y`
[0..1] Dimension of the aperture in Y.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:size/cs:y/@unit`
[1..1] Required unit for the dimension of y. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:size/cs:z`
[0..1] Dimension of the aperture in Z. While this is allowed by the standard, it does not make much sense for small-angle scattering.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:aperture/cs:size/cs:z/@unit`
[1..1] Required unit for the dimension of z. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:length`
[0..1] Amount/length of collimation inserted (on a SANS instrument).

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SAScollimation/cs:length/@unit`
[1..1] length requires a unit to be specified. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector`
[1..inf] Description of a single or composite detector.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:beam_center`
[0..1] Center of the beam on the detector in X and Y.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:beam_center/@name`
Optional attribute to clarify the name of this detector beam center.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:beam_center/cs:x`
[0..1] Center of the beam on the detector in X.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:beam_center/cs:x/@unit`
[1..1] Required unit for the dimension of x. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:beam_center/cs:y`
[0..1] Center of the beam on the detector in Y.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:beam_center/cs:y/@unit`
[1..1] Required unit for the dimension of y. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:beam_center/cs:z`
[0..1] Center of the beam on the detector in Z. While this is allowed by the standard, it does not make much sense for small-angle scattering.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:beam_center/cs:z/@unit`

[1..1] Required unit for the dimension of z. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:name

[1..1] Name of the detector.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:offset

[0..1] Offset of the detector position in X, Y, and Z.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:offset/@name

Optional attribute to clarify the name of this beam size.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:offset/cs:x

[0..1] Offset of the detector position in X.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:offset/cs:x/@unit

[1..1] Required unit for the dimension of x. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:offset/cs:y

[0..1] Offset of the detector position in Y.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:offset/cs:y/@unit

[1..1] Required unit for the dimension of y. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:offset/cs:z

[0..1] Offset of the detector position in Z. While this is allowed by the standard, it does not make much sense for small-angle scattering.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:offset/cs:z/@unit

[1..1] Required unit for the dimension of z. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:orientation

[0..1] Orientation (rotation) of the detector in roll, pitch, and yaw. Must specify the unit as an attribute.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:orientation/@name

Optional attribute to name this orientation.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:orientation/cs:pitch

[0..1] Optional rotation of the detector about the X axis (pitch).

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:orientation/cs:pitch/@unit

[1..1] Required unit for the dimension of pitch. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:orientation/cs:roll

[0..1] Optional rotation of the detector about the Z axis (roll).

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:orientation/cs:roll/@unit

[1..1] Required unit for the dimension of roll. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:orientation/cs:yaw

[0..1] Optional rotation of the detector about the Y axis (yaw).

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:orientation/cs:yaw/@unit

[1..1] Required unit for the dimension of yaw. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:pixel_size

[0..1] Size of detector pixels in X and Y.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:pixel_size/@name

Optional attribute to clarify the name of this detector pixel size.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:pixel_size/cs:x

[0..1] Size of detector pixels in X.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:pixel_size/cs:x/@unit

[1..1] Required unit for the dimension of x. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:pixel_size/cs:y

[0..1] Size of detector pixels in Y.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:pixel_size/cs:y/@unit

[1..1] Required unit for the dimension of y. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:pixel_size/cs:z

[0..1] Size of detector pixels in Z. While this is allowed by the standard, it does not make much sense for small-angle scattering.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:pixel_size/cs:z/@unit
[1..1] Required unit for the dimension of z. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:SDD
[0..1] Distance between sample and detector. Must specify the unit as an attribute.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:SDD/@unit
[1..1] Required unit for SDD. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:slit_length
[0..1] Slit length of the instrument for this detector. Must specify the unit as an attribute.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASdetector/cs:slit_length/@unit
[1..1] Required unit for the slit length. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource
[1..1] Description of the source of the radiation.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/@name
[0..1] Optional text description of the source of the radiation (incident on the sample). This can be different from /cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:radiation.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:beam_shape
[0..1] Text description of the shape of the beam (incident on the sample).

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:beam_size
[0..1] Physical dimension of the beam (incident on the sample). Note: If beam is round, just use X dimension. Note: While Z dimension is allowed by the standard, it does not make sense for small-angle scattering.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:beam_size/@name
Optional attribute to clarify the name of this beam size.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:beam_size/cs:x
[0..1] Dimension of the beam size in X.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:beam_size/cs:x/@unit
[1..1] Required unit for the dimension of x. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:beam_size/cs:y
[0..1] Dimension of the beam size in Y.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:beam_size/cs:y/@unit
[1..1] Required unit for the dimension of y. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:beam_size/cs:z
[0..1] Dimension of the beam size in Z. While this is allowed by the standard, it does not make much sense for small-angle scattering.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:beam_size/cs:z/@unit
[1..1] Required unit for the dimension of z. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:radiation
[1..1] Name of the radiation used (neutron, X-ray, synchrotron X-ray, Cu Ka X-ray tube, ..."

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:wavelength
[0..1] wavelength of radiation incident on the sample.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:wavelength/@unit
[1..1] wavelength of radiation requires a unit to be specified. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:wavelength_max
[0..1] Some facilities specify wavelength using a range. The maximum of such a range is given by wavelength_max.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:wavelength_max/@unit
[1..1] wavelength_max requires a unit to be specified. (See @unit for details.)

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:wavelength_min
[0..1] Some facilities specify wavelength using a range. The minimum of such a range is given by wavelength_min.

/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:wavelength_min/@unit

[1..1] wavelength_min requires a unit to be specified. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:wavelength_spread`

[0..1] Some facilities specify the width of the wavelength spectrum. The minimum of such a range is given by wavelength_spread.

`/cs:SASroot/cs:SASentry/cs:SASinstrument/cs:SASsource/cs:wavelength_spread/@unit`

[1..1] wavelength_spread requires a unit to be specified. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASnote`

[1..] Free form description of anything not covered by other elements.

`/cs:SASroot/cs:SASentry/cs:SASprocess`

[0..inf] Description of a processing or analysis step.

`/cs:SASroot/cs:SASentry/cs:SASprocess/@name`

[0..1] Optional attribute to provide a name for this SASprocess. It is redundant with /cs:SASroot /cs:SASentry/cs:SASprocess/cs:name but it is not the same. It should probably be removed.

`/cs:SASroot/cs:SASentry/cs:SASprocess/cs:date`

[0..1] Optional date for this data processing or analysis step. *** SHOULD WE SPECIFY THE FORMAT FOR THE DATE? ***

`/cs:SASroot/cs:SASentry/cs:SASprocess/cs:description`

[0..1] Optional description for this data processing or analysis step.

`/cs:SASroot/cs:SASentry/cs:SASprocess/cs:name`

[0..1] Optional name for this data processing or analysis step.

`/cs:SASroot/cs:SASentry/cs:SASprocess/cs:SASprocessnote`

[1..inf] This element is used to describe anything about SASprocess that is not already described.

`/cs:SASroot/cs:SASentry/cs:SASprocess/cs:SASprocessnote/<any>`

[0..inf] Provision at this point for any element to be entered that is not part of the canSAS standard. Use a **xmlns="some-simple-identification-string"** to identify that this is a *foreign element.*

`/cs:SASroot/cs:SASentry/cs:SASprocess/cs:term`

[0..1] This is used to specify the value of a single variable, parameter, or term related to the SASprocess step.

`/cs:SASroot/cs:SASentry/cs:SASsample`

[] Description of the sample.

`/cs:SASroot/cs:SASentry/cs:SASsample/@name`

[0..1] Optional attribute to name this sample. (Should be the same as SASsample/cs:ID)

`/cs:SASroot/cs:SASentry/cs:SASsample/<any>`

[0..inf] Provision at this point for any element to be entered that is not part of the canSAS standard. Use a **xmlns="some-simple-identification-string"** to identify that this is a *foreign element.*

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:details`

[0..inf] Text string to supply additional sample details.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:ID`

[1..1] Text string that identifies this sample.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:orientation`

[0..1] Orientation (rotation) of the sample.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:orientation/@name`

Optional attribute to name this orientation.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:orientation/cs:pitch`

[0..1] Optional rotation of the sample about the X axis (pitch).

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:orientation/cs:pitch/@unit`

[1..1] Required unit for the dimension of pitch. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:orientation/cs:roll`

[0..1] Optional rotation of the sample about the Z axis (roll).

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:orientation/cs:roll/@unit`

[1..1] Required unit for the dimension of roll. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:orientation/cs:yaw`
: [0..1] Optional rotation of the sample about the Y axis (yaw).

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:orientation/cs:yaw/@unit`
: [1..1] Required unit for the dimension of yaw. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:position`
: [0..1] Location in X, Y, and Z of the sample. Must specify the unit as an attribute to each position.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:position/@name`
: Optional attribute to name this position.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:position/cs:x`
: [0..1] Location of the sample in X.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:position/cs:x/@unit`
: [1..1] Required unit for the dimension of x. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:position/cs:y`
: [0..1] Location of the sample in Y.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:position/cs:y/@unit`
: [1..1] Required unit for the dimension of y. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:position/cs:z`
: [0..1] Location of the sample in Z. While this is allowed by the standard, it does not make much sense for small-angle scattering.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:position/cs:z/@unit`
: [1..1] Required unit for the dimension of z. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:temperature`
: [0..1] Temperature of this sample. Must specify the unit as an attribute.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:temperature/@unit`
: [1..1] Required unit for temperature. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:thickness`
: [0..1] Thickness of this sample. Must specify the unit as an attribute.

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:thickness/@unit`
: [1..1] Required unit for thickness. (See @unit for details.)

`/cs:SASroot/cs:SASentry/cs:SASsample/cs:transmission`
: [0..1] Transmission (1-attenuation) of this sample. Express this as a fraction, not as a percentage. NOTE: there is not "unit" attribute.

`/cs:SASroot/cs:SASentry/cs:Title`
: [1..1] Title of this SASentry.

`@unit`
: Data unit to be given in standard SI abbreviations (e.g., m, cm, mm, nm, K) with the following exceptions: um=micrometres C=celsius A=Angstroms percent=%. fraction a.u.=arbitrary units none=no units are relevant (such as dimensionless)

`cs:term`
: [0..1] This is used to specify the value of a single variable, parameter, or term related to the SASprocess step. This could also be used in a SASnote element to indicate terms not associated with a SASprocess step.

`cs:term/@name`
: [1..1] Name of the term.

`cs:term/@unit`
: [1..1] Unit (string) of the term. (See @unit for details.)

`orientation/cs:pitch`
: [0..1] Rotation about about the X axis. Unit must be specified.

`orientation/cs:roll`
: [0..1] Rotation about about the Z axis. Unit must be specified.

`orientation/cs:yaw`

[0..1] Rotation about about the Y axis. Unit must be specified.

`position/cs:x`
: [0..1] Translation in the horizontal direction, orthogonal to Y and Z. Positive X direction increases as defined by Y and Z. Unit must be specified.

`position/cs:y`
: [0..1] Translation along the vertical gravitational direction. Positive direction increases upward. Unit must be specified.

`position/cs:z`
: [0..1] Translation along the beam direction. Positive direction increases from source towards detector. Unit must be specified.

`roll, pitch, yaw`
: Coordinates for (roll, pitch, yaw) values representing an orientation or rotation. Unit must be specified for each.

`x, y, z`
: Coordinates for (x, y, z) values representing a position or dimension. Unit must be specified for each.