

Multiple scattering – diffraction

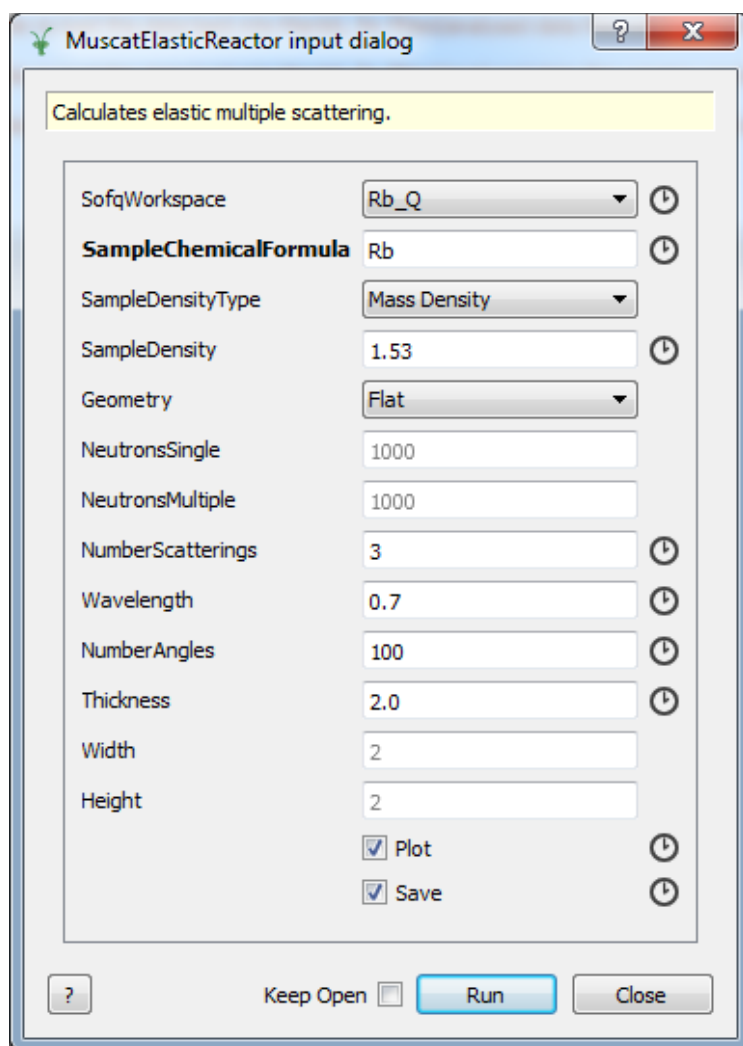
The algorithm is MuscatElasticReactor and is set for $S(Q)$ measured on a reactor. The input workspace has 1 histogram for $S(Q)$.

NeutronsSingle is the number of single scattering events & NeutronsMultiple the number of multiple scattering events. These can be changed to alter the statistics of the 2 sorts of scattering.

NumberScatterings is the number of multiple scattering events. A quick run with 3 (or more) will give the relative multiple scattering levels. A longer run is then done with the appropriate number. In this example, the quick run would be 3 and the long run 2. Scattering = 0 is the case for zero absorption.

The Q value is converted to scattering angle (2θ) using Wavelength and the NumberAngles is selected for the calculation.

This example is set up for FlatPlate geometry.



The image shows a software dialog box titled "MuscatElasticReactor input dialog". It contains various input fields and checkboxes for configuring a simulation. The fields are arranged in a list on the left, with their corresponding values or settings in text boxes or dropdown menus on the right. Some fields have a circular icon with a clock symbol next to them, indicating they might be linked to a specific workspace or have a default value. At the bottom, there are checkboxes for "Plot" and "Save", and buttons for "Run" and "Close".

Parameter	Value/Setting
SoftqWorkspace	Rb_Q
SampleChemicalFormula	Rb
SampleDensityType	Mass Density
SampleDensity	1.53
Geometry	Flat
NeutronsSingle	1000
NeutronsMultiple	1000
NumberScatterings	3
Wavelength	0.7
NumberAngles	100
Thickness	2.0
Width	2
Height	2
Plot	<input checked="" type="checkbox"/>
Save	<input checked="" type="checkbox"/>

Buttons: Run, Close. Checkboxes: Keep Open, Plot, Save.

File Rb_Q.nxs has Mass density = 1.53 and wavelength = 0.7
File Ni_Q.nxs has Mass density = 8.9 and wavelength = 0.35