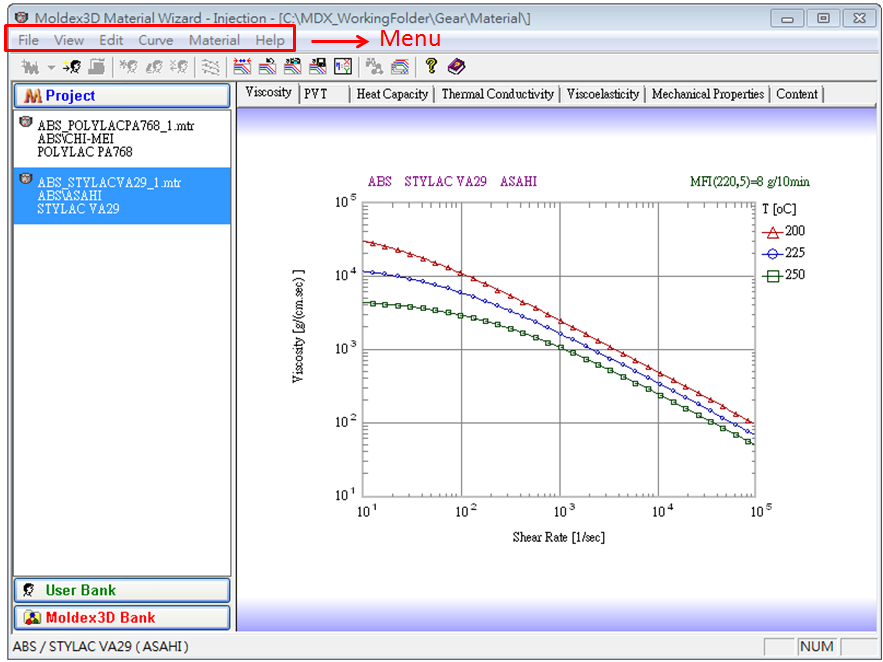
Material Wizard

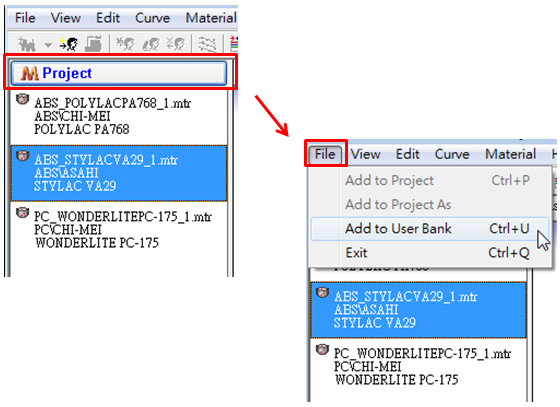
Menu

Menu toolbar is on the top of Material Wizard window. It contains File, View, Edit Curve, Material and Help. Among them, options in File, Edit, and Material vary as switch to different manage tab. You can get more information in the following description.



Project > File

Switch the manager tab to Project, and click **File**. There are only two options in work listed on File panel.



Add to User Bank

You can add any material under Project tab into User Bank.

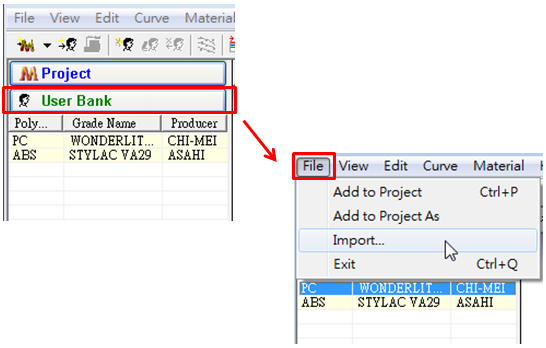
Select the material under Project, click **Add to User Bank**, and the selected material will be added into User Bank immediately.

Exit

Exit Material Wizard.

User Bank > File

Switch the manager tab to User Bank, and click **File**. There are four options listed on File panel.



Add to Project

It is an available function in User Bank. You can add any selected material listed under User Bank into Project.

Select the material, click **Add to Project**, and the selected material will be added into Project immediately.

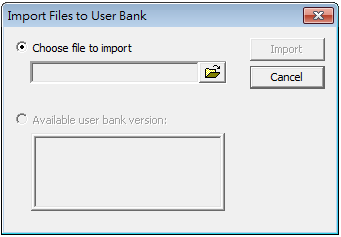
Add to Project As

It is an available function in User Bank. You can add any material under User Bank into Project in other name.

Select the material, click **Add to Project As**, andsave it in other name.

Import

You can import any material from other source and save it in User Bank for later usage. Click **Import**, and a pop-up dialog shows.

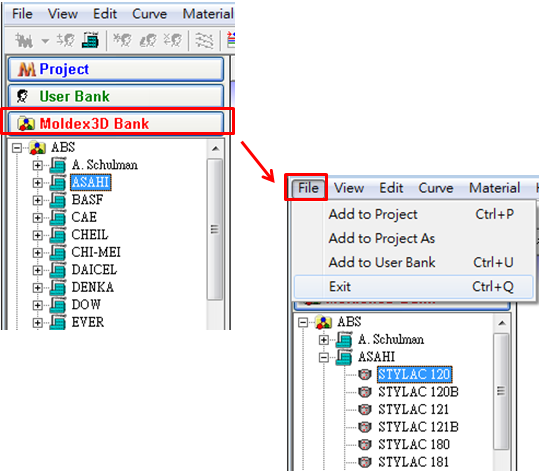


Exit

Exit Material Wizard.

Moldex3D Bank > File

Switch the manager tab to User Bank, and click **File**. There are four options listed on File panel.



Add to Project

It is an available function in Moldex3D Bank. You can add any selected material listed under Moldex3D Bank into Project.

Select the material, click **Add to Project**, and the selected material will be added into Project immediately.

Add to Project As

It is an available function in Moldex3D Bank. You can add any material under User Bank into Project in other name.

Select the material, click **Add to Project As**, andsave it in other name.

Add to User Bank

You can add any material under Moldex3D Bank into User Bank.

Select the material under Moldex3D Bank, click **Add to User Bank**, and the selected material will be added into User Bank immediately.

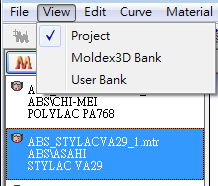
Exit

Exit Material Wizard.

View

This is another way you can switch tabs in Manage Window.

Click **View**, and there are three options you can click as below.

* 

Project

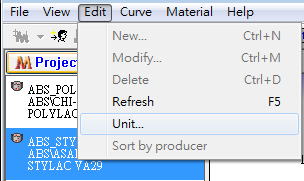
Moldex3D Bank

User Bank

Edit

* With this function, you can edit material parameters.
* Project > Edit

Switch the manager tab to Project, and click **Edit**. There are only two options in work listed on Edit panel.

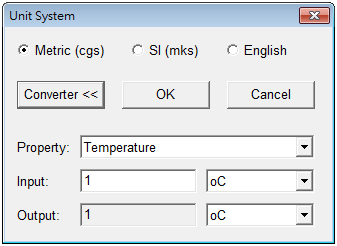
* 

Refresh

Click **Refresh** to reload current available material list in Project.

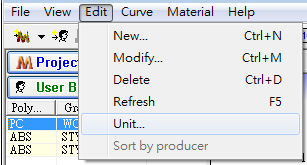
Unit

Click **Unit**, and a pop-up panel shows. You can change the unit of variables or do the unit conversion.



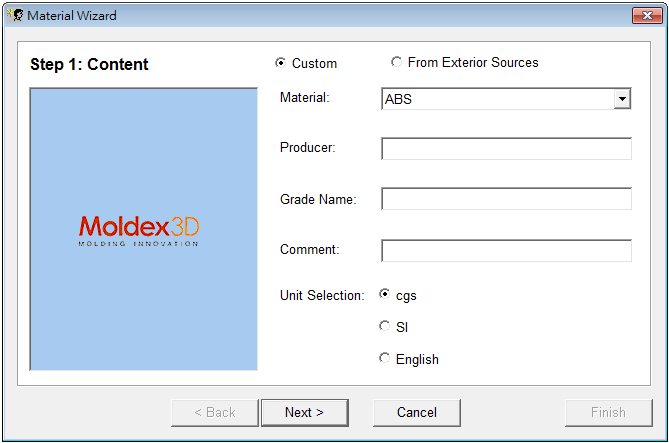
* User Bank > Edit

Switch the manager tab to User Bank, and click **Edit**. There are five options in work listed on Edit panel.



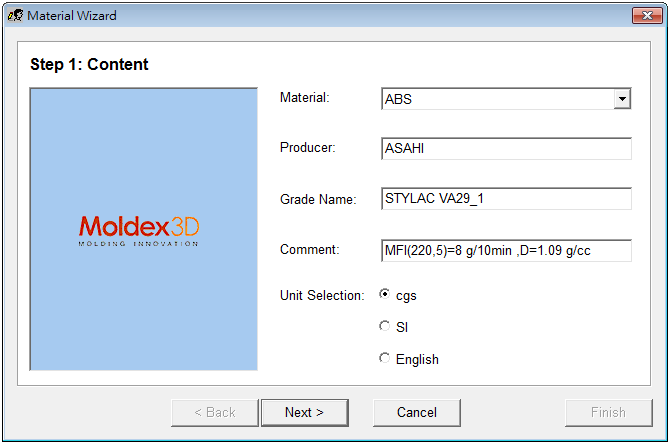
New

Click **New**, you can create a customized new material file on your own. Input all necessary information in each step, and click **Finish** to save the new file in User Bank.



Modify

Click the material you want to modify in User Bank, and click **Modify**. The material information shown on the pop-up panel is changeable per your need. Complete all steps, and click **Finish** to save the changes of this material in User Bank.

* 

Delete

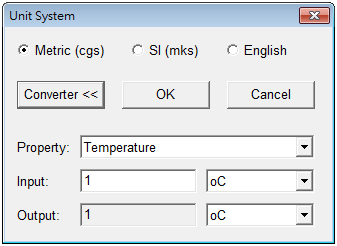
Select the material you want to delete, and click **Delete**.

Refresh

Click **Refresh** to reload current available material list in Project.

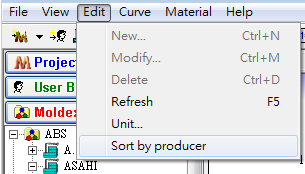
Unit

Click **Unit**, and a pop-up panel shows. You can change the unit of variables or do the unit conversion.



Moldex3D Bank > Edit

Switch the manager tab to Moldex3D Bank, and click **Edit**. There are only three options in work listed on Edit panel.

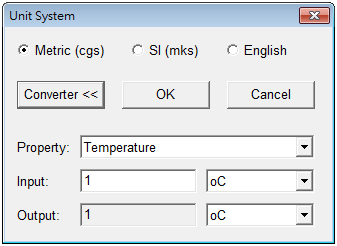


Refresh

Click **Refresh** to reload current available material list in Project.

Unit

Click **Unit**, and a pop-up panel shows. You can change the unit of variables or do the unit conversion.

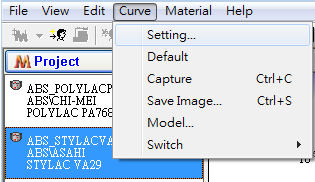


Sort by producer

Click **Sort by producer**, material list under Moldex3D Bank will be sorted by producer instead of material type.

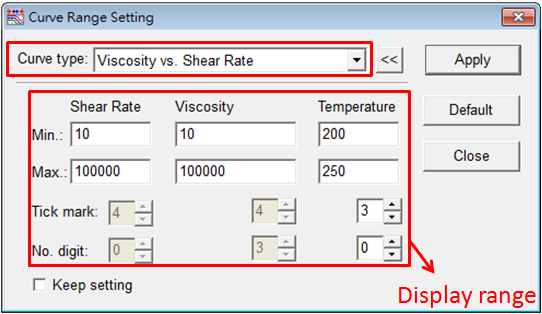
Curve

Curve provides you control function of the curve display of material. Click **Curve**, there are six options in work as shown below, and no option difference exists when switch to any manage tab.

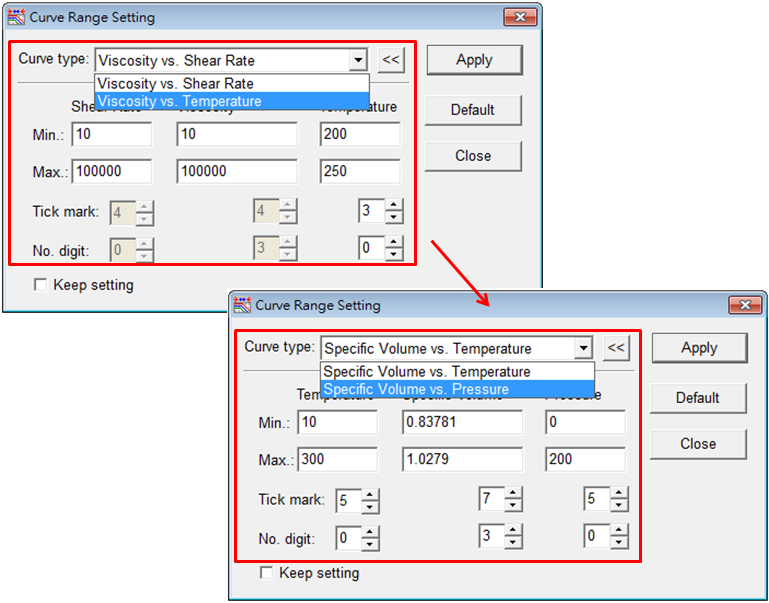
* 

Setting

You can change Curve type, and set the curve display range of the variable on the chart. Click **Apply** to current setting; click **Default**, recover the default setting.



Curve type and display range vary as the material property item changes. For example, when switch the tab from Viscosity to PVT, curve type and display range change accordingly.



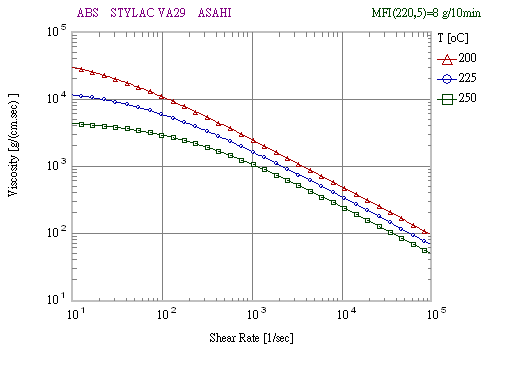
Default

When you change any setting of the curve and want to revert the original setting, this option can help revert all curve settings back to default.

Capture

When you want to cut the curve of material property, this option can help capture the curve chart.

Click **Capture**, and paste it on other executive software, such as Microsoft Word, Microsoft Powerpoint, Microsoft Paint, and so on.



Save Image

When you want to save the curve chart, this option helps save it immediately.

Click **Save Image**, and a pop-up dialog shows. Name the image, and save it in your preferred destination.

Model

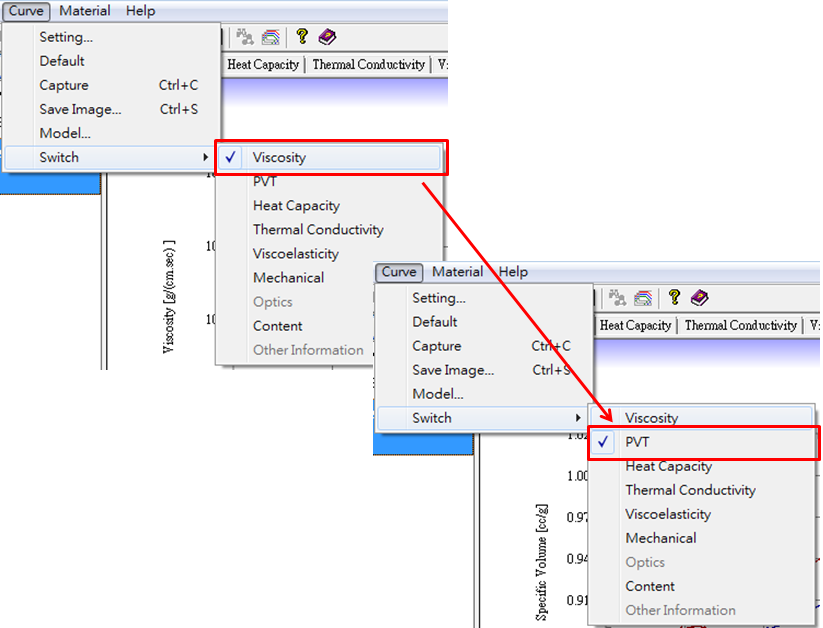
When you want to view the model of the current material property, this option will show the model immediately.

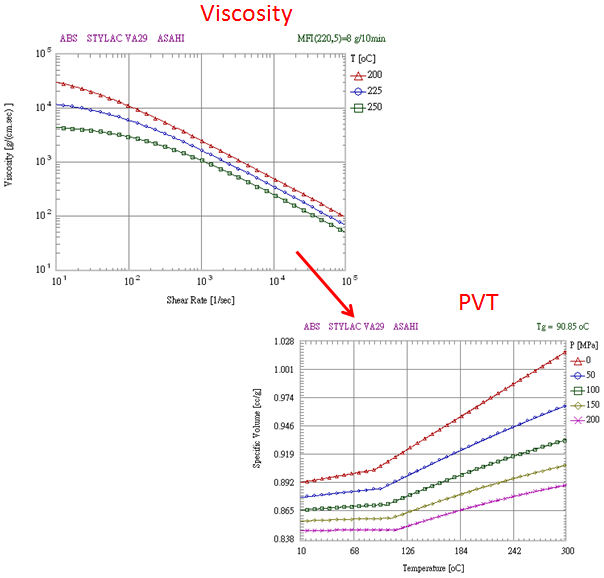
Click **Model**, and the model of the material property shows.

Switch

This is another way to switch the property option of the selected material.

Click **Switch**, and 9 property options show on the panel. Click **PVT**, the curve chart changes as PVT curve.





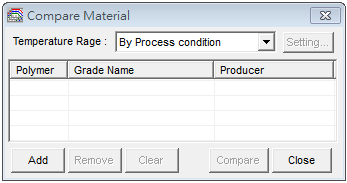
Material

Material offers two options, Find and Compare. Only when the manage tab is switched to Moldex3D Bank, Find option is available.

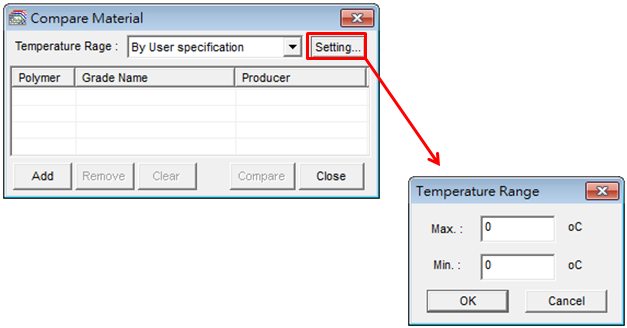
* Project > Material

Compare

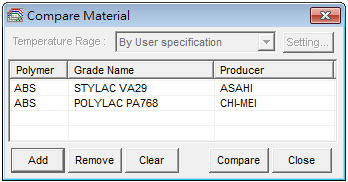
Click **Compare**, Compare Material dialog shows.

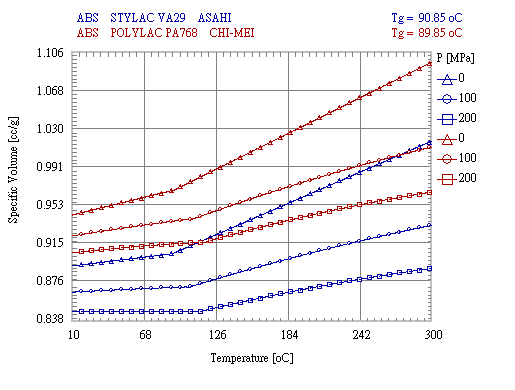


The default setting of Temperature Range is By Process condition. However, it is changeable by selecting **By User Specification** from thedropmenu of temperature range. After select By **User Specification**, click **Setting** next to the option box. A pop-up panel shows, input Max. and Min. temperatures here.



Select the materials you want to compare from any manage tab, and click **Add** on the bottom of the panel. Click **Compare**, and the chart will show the comparison result.





Other functions of Compare Material panel:

Remove: remove specific material(s). Select the material you don’t want, and click **Remove**.

Clear: remove all materials on the list. Click **Clear** to remove all materials.

Close: exit Compare Material.

* User Bank > Material

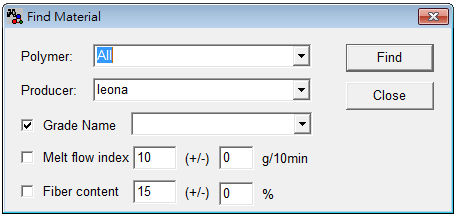
Compare

The function description is the same as that in Project\_Material. Refer to the above description.

* Moldex3D Bank > Material

Find

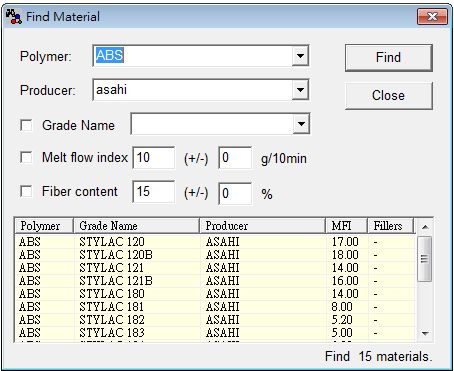
Click **Find**, and a Find Material panel shows.



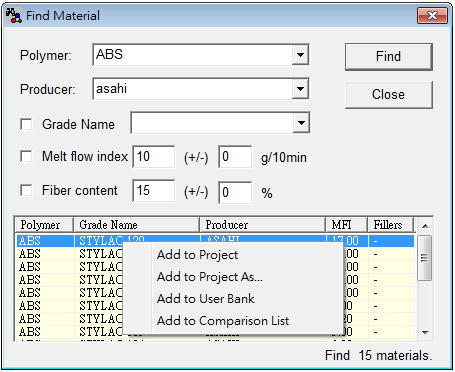
Click the dropdown menu of Polymer, and select the material type.

Input material producer’s name. Note that the wizard will record the name of the material producer you input, so you can pick the name from the dropdown menu next time as well.

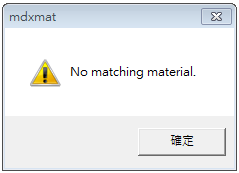
Check the required items, and click **Find**. The material matching the conditions will show one the panel below.



Select the material you want from the list, and right-click it. From the context menu, select the suitable option. Click **Close** to exit Find Material.



Note that if there is no material matching the conditions, a message pops up as the figure below.



Compare

The function description is the same as that in Project\_Material. Refer to the above description.

Help

Help provides you some information of material.

About **Moldex3D** Material Wizard

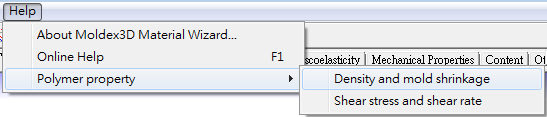
It shows the version information of Material Wizard.

Online Help

It links the online help of Material Wizard.

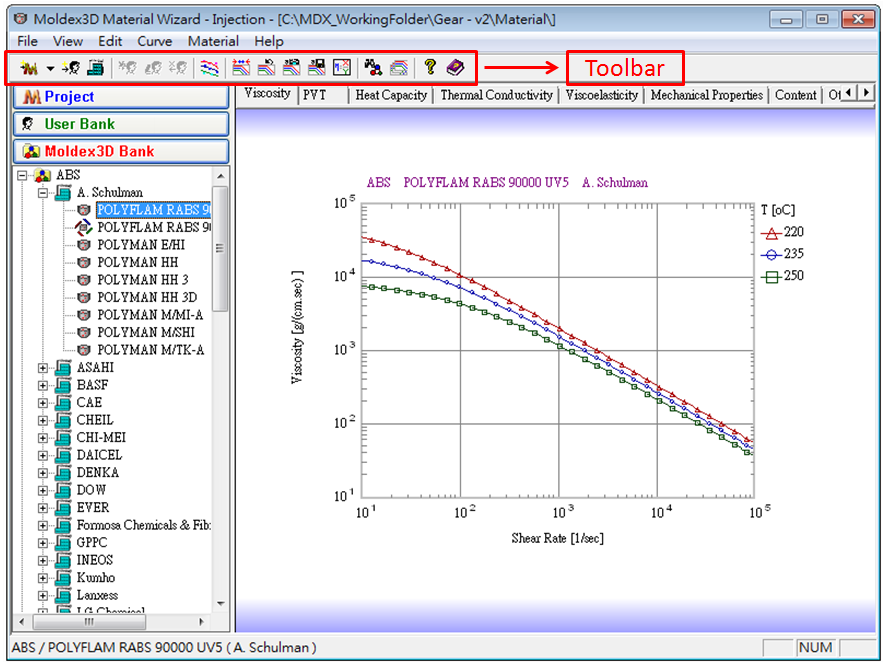
Polymer property

It links information of Density and mold shrinkage and Shear stress and shear rate.



Toolbar

Toolbar lists several frequently-used functions.



The function definitions for each icon are displayed in the table below.

|  |  |  |
| --- | --- | --- |
|  | Definition | Command |
| 49.png | Add the selected material to project | Add to Project  Add to Project As |
|  | Add the selected material to user bank | Add to User Bank |
|  | Sort material by producer | Sort by producer |
|  | Add new material into User Bank | New |
|  | Modify the selected material | Modify |
|  | Delete the selected material | Delete |
|  | Display raw data and fitting curves | Display raw data and fitting curves |
|  | Set curve range | Setting |
|  | Revert default curve setting | Default |
|  | Capture curve figure and paste it in any display program | Capture |
|  | Save curve figure as bitmap file | Save Image |
|  | Show model and parameters | Model |
|  | Find material in **Moldex3D** bank | Find |
| 4 | Compare the property of different materials | Compare |
|  | Display **Moldex3D** Material Wizard information | About |
|  | Open **Moldex3D** Material Wizard Help | Help |

Display raw data and fitting curves  is a special function, which enables users to view the raw data of some materials. Note that it is available only for the materials that have raw data of Viscosity or PVT.

Manager Window

Here displays three manager tabs, covering: Project, User Bank, and Moldex3D Bank.

The material list for each tab lists under the tab. Switch any tab, right click the material, and the context menu for the material shows.

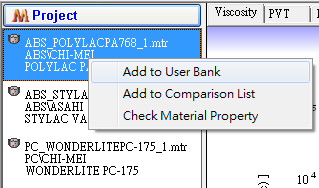
In Project

It shows the materials in use in Project. Right click the material, and there are three options you can choose.

Add to User Bank: you can add the selected material into User Bank.

Add to Comparison List: you can add the selected material into comparison list to make it compared with other materials.

Check Material Property: the selected material will be checked to make sure it is ok.



In User Bank

It saves materials that users want in User Bank. Right click the material, and there are three options you can choose.

Add to Project: you can add the selected material into Project.

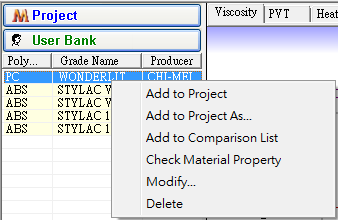
Add to Project As: you can add the selected material into Project in another name.

Add to Comparison List: you can add the selected material into comparison list to make it compared with other materials.

Check Material Property: the selected material will be checked to make sure it is ok.

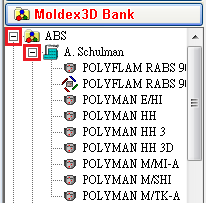
Modify: you can modify the parameters of the selected material.

Delete: you can remove the selected material from User Bank.



In Moldex3D Bank

Here lists all materials in Moldex3D Bank. You can click **94.png** in front of each polymer to expand the producer list for each material.

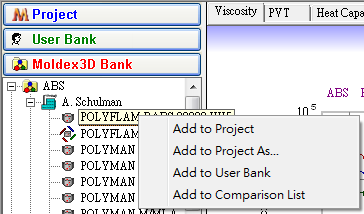


Add to Project: you can add the selected material into Project.

Add to Project As: you can add the selected material into Project in another name.

Add to User Bank: you can add the selected material into User Bank.

Add to Comparison List: you can add the selected material into comparison list to make it compared with other materials.



Tabs in Material Data Window

Tabs of the material property list on the top of the chart window. The tab display varies as switch to different manager tab.

Project > Material property tab

53.PNG

User Bank > Material property tab

56.PNG

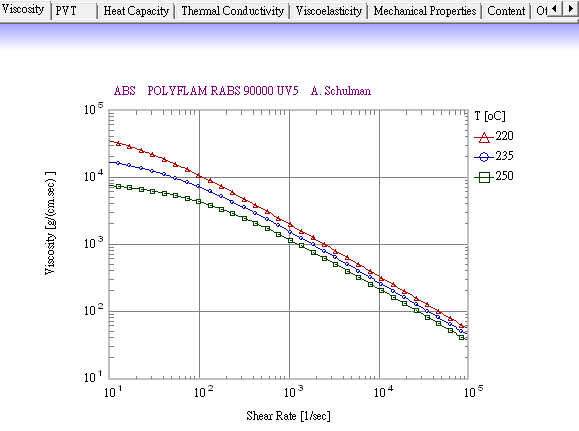
Moldex3D Bank > Material property tab

59.PNG

Explanation of Each Tab in chart window

Viscosity

The viscosity curve of the selected material is shown on the material data window.

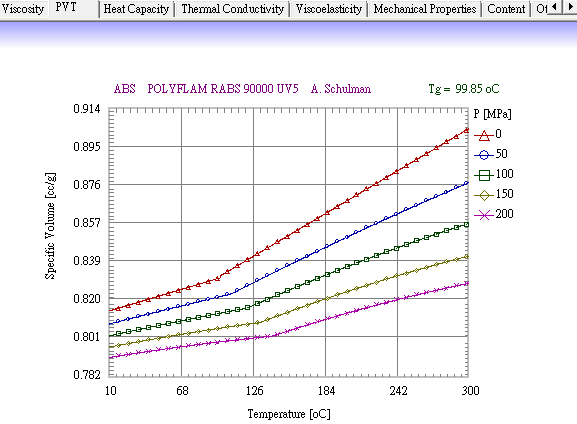


Viscosity is the index of the resistance of fluid to flow. The viscosity of simple fluids, e.g., water or oil, is usually a constant value at constant temperature. These fluids are generally referred as Newtonian fluids. The viscosity of plastic is complicated. Unlike simple fluids, the viscosity of plastic depends on its chemical structure, composition and processing conditions. With a given chemical structure and formulation, viscosity of plastics depends on temperature, shear rate and pressure.

For further information about Viscosity, refer to Material in Reference.

PVT

The PVT (Pressure Volume Temperature) curves of selected material are shown on material data window.



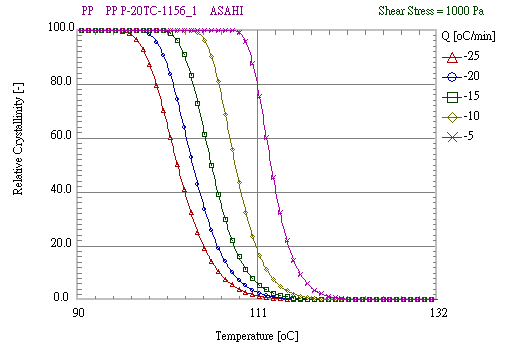
Plastic generally undergoes a significant volumetric change over temperature and pressure. It’s therefore essential to characterize its Pressure-Volume-Temperature (PVT) relationship in order to calculate the compressibility of material during packing phase, and its final part shrinkage and warpage after ejection.

For further information about PVT, refer to Material in Reference.

Crystallinity

There are two types between molecular segments and their neighbors, amorphous and crystalline. Amorphous is defined as having a purely random structure while crystalline corresponds to highly organized pack of molecule chains.

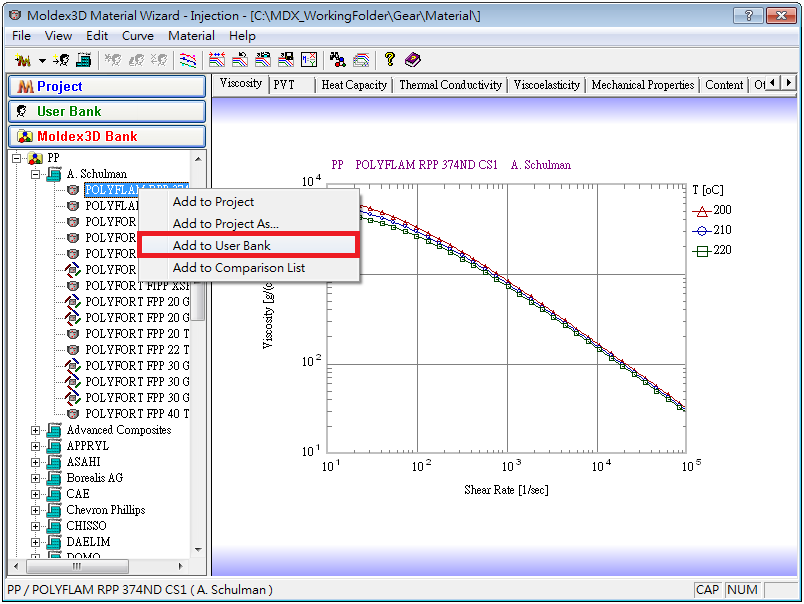
Only crystalline material has crystallinity property depicted in the Material Data Window.



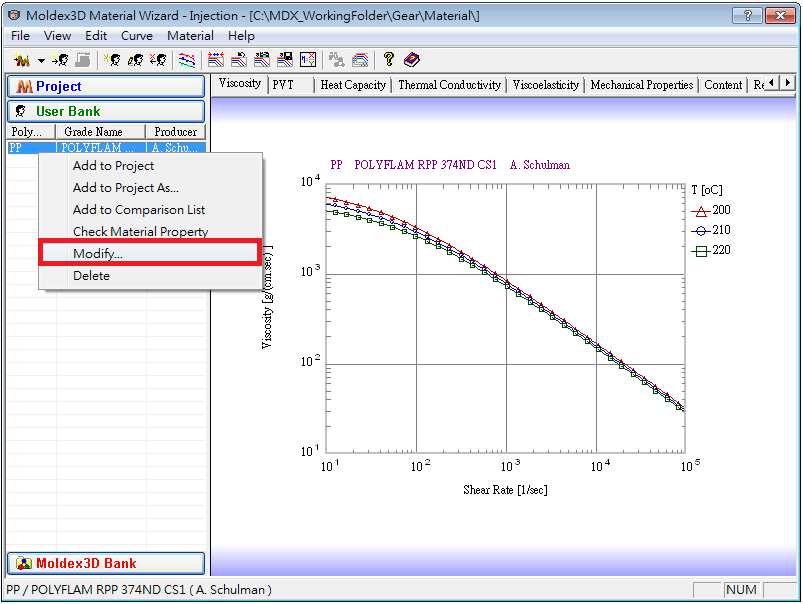
When a semi-crystalline polymer melt is cooled down into its crystallization temperature range, crystallization starts around discrete points (nuclei). Then the crystals grow around nuclei to form spherulites. Once all the spherulites meet their neighbors, the crystallization process is complete.

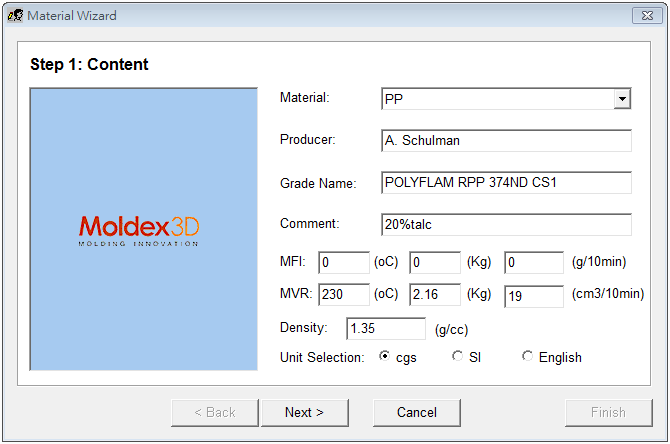
Note that crystallinity property of a material can be created or modified when switching to User Bank mode. Following is brief steps of creating a material file with crystallinity property.

1. Enter Material Wizard in creating a new run steps.
2. Select the material you want to put into Project as the material of the part. Here, right-click PP POLYLAM RPP 374ND CS1 in A.Schulman and select **Add to User Bank** from its context menu.

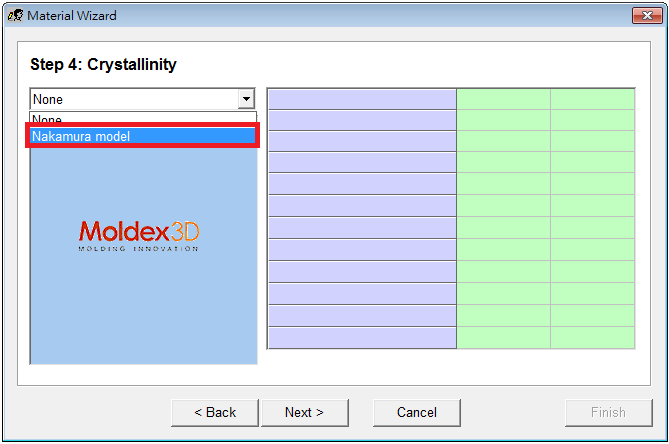


1. Switch to User Bank. Right-click PP POLYLAM RPP 374ND CS1, and select **Modify** in context menu. A material information setting window shows.





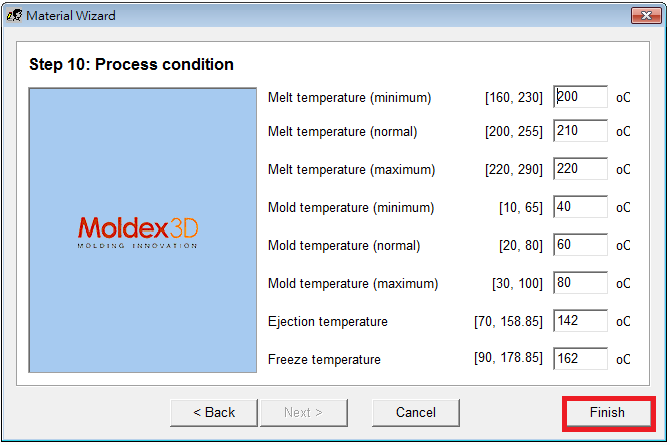
1. Click Next to Step 4: Crystallinity, and select Nakamura model in the dropdown menu in the left corner.



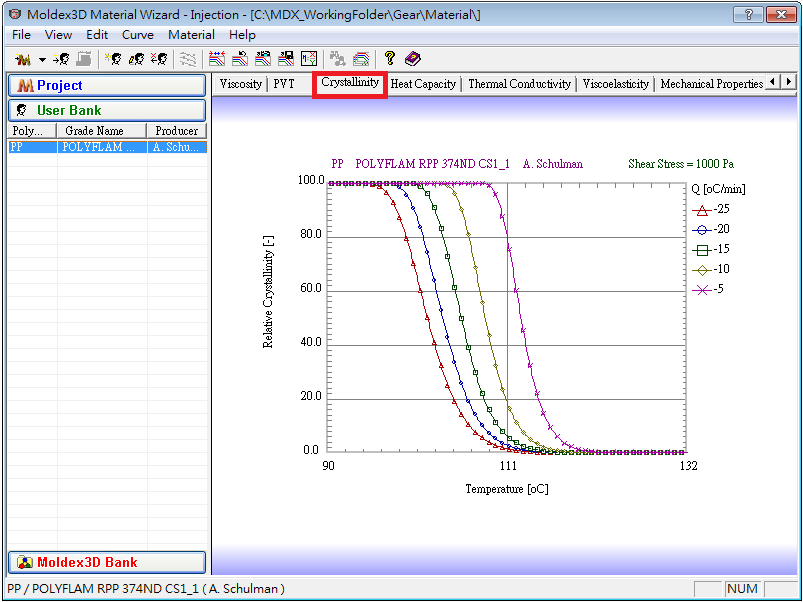
The crystallinity parameter shows in the table. Stay default or modify it as you have data.

Click **Next** till finish all steps.

1. Click **Finish** to get back to the main window of Material Wizard.



1. Crystallinity tab of PP POLYLAM RPP 374ND CS1 shows. The curve of crystallinity can be reviewed.

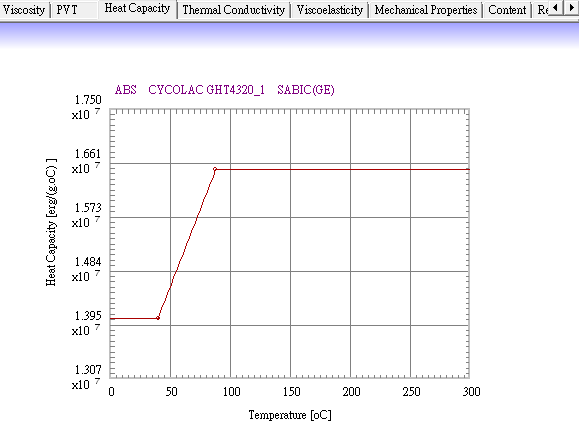


1. Right-click PP POLYLAM RPP 374ND CS1, and select Add to Project. Assign this material as the part material. With this crystallinity property, you can set crystallinity analysis later in Computation Parameter. And gain crystallinity result later after analyzing.

For more information, refer to Computation Parameter.

Heat Capacity

The heat capacity (Cp) curve of the selected material is shown on material data window.



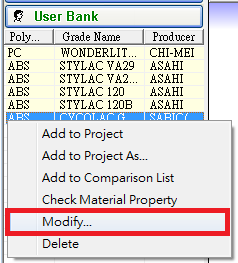
Heat capacity is the amount energy required to heat up a unit mass of the material for one degree. If one neglects the effects of possible chemical or physical transformation in the material, the internal energy of the material is related to the material temperature through heat capacity.

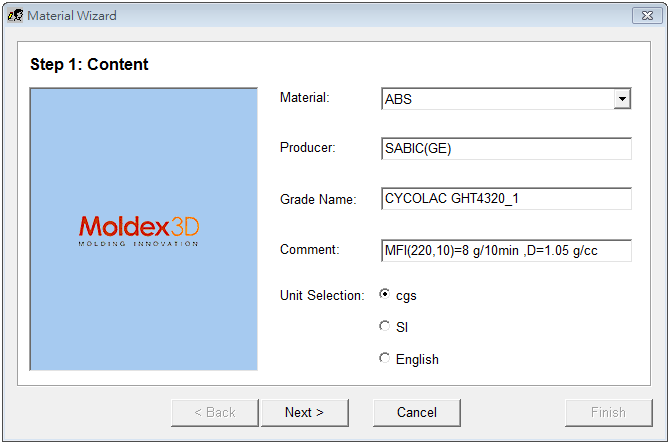
For further information about Heat Capacity, refer to Material in Reference.

**Modify the heat capacity based on multiple data sources**

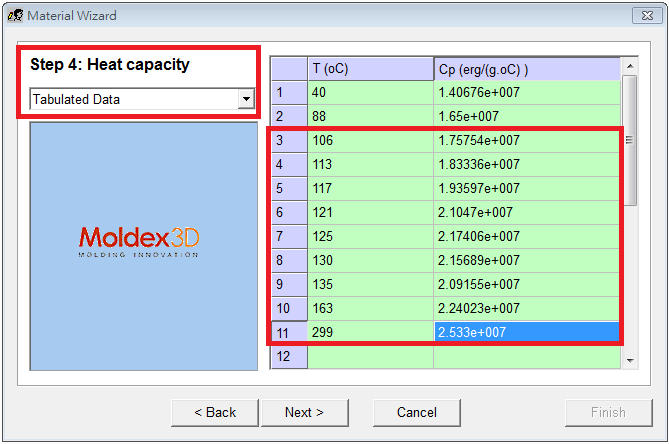
Allow the input tabulated data up to 25 points in heat capacity for data modification through Material Wizard. Following is an example to display the modification procedures.

1. Select the material you want to change, and right click it to activate pop-up menu. Click **Modify** in the pop-up menu. Material Wizard window shows.

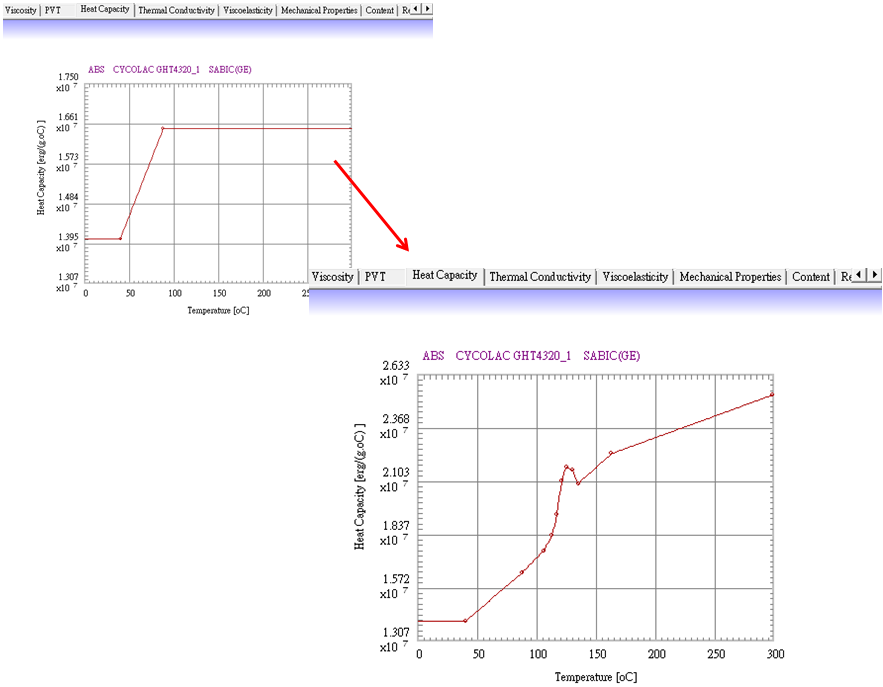




1. Click **Next** on Material Wizard till Step 4: Heat Capacity. Select the model from the dropmenu as Tabulated Data, and input data on the table.

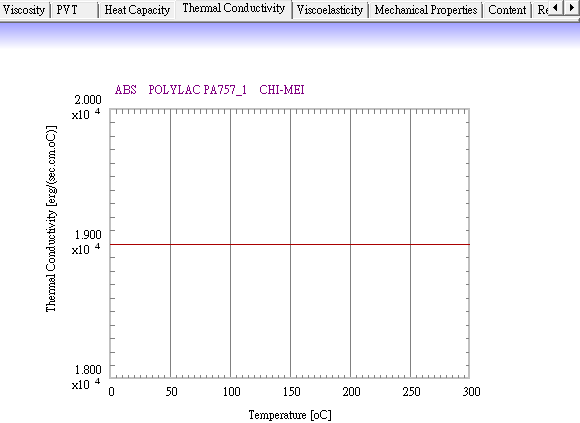


1. Click **Next** to the last step. Click **Finish** to exit the wizard. The chart of heat capacity changes accordingly.



Thermal Conductivity

The thermal conductivity (K) curve of the selected material is shown on Material data window when clicking the **Thermal Conductivity** tab.



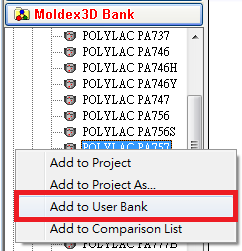
Thermal conductivity plays critical roles in melt cooling calculation during filling and packing, cycle time estimation and part temperature distribution…etc. However, thermal conductivity of thermoplastic appears to be a weak function of temperature, independent of molecular weight, and does not vary significantly from one thermoplastic to another. The thermal conductivity of thermoplastic is generally relatively low as compared to the mold metal. The low thermal conductivity reduces the heat transferred to the surroundings. Considering the heat dissipated by viscous forces of high viscosity thermoplastic, the temperature distribution across the thickness of thermoplastic is therefore quite non-isothermal.

For further information about Thermal Conductivity, refer to Material in Reference.

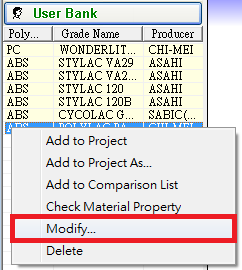
Modify the thermal conductivity based on multiple data sources

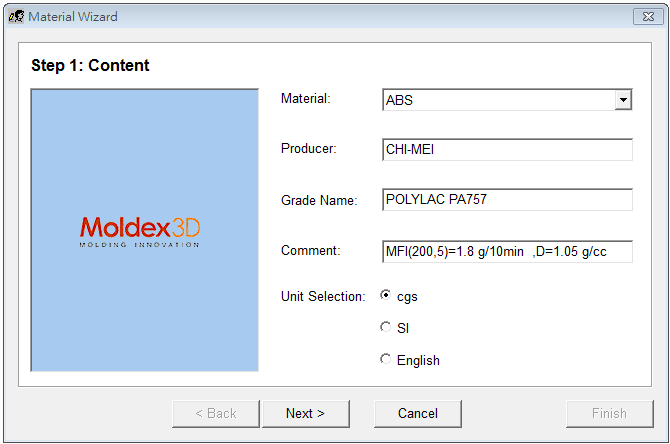
Allow the input tabulated data up to 25 points in thermal conductivity for data modification through Material Wizard. Following is an example to display the modification procedures.

1. Select one material, ABS\_POLYLAC PA757\_CHI-MEI from Moldex3D Bank, right click it, and click **Add to User Bank**.

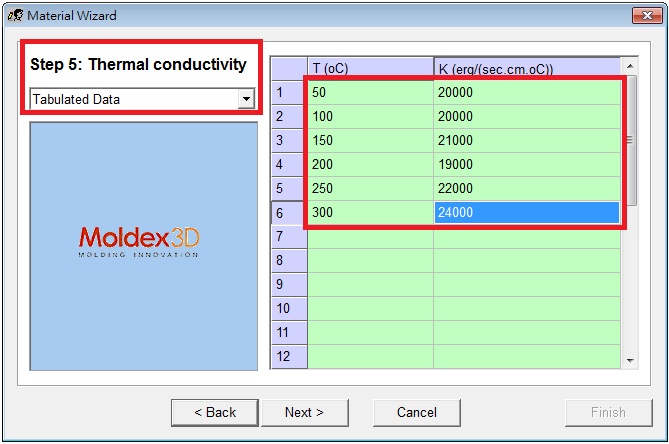


1. Switch to User Bank, select the material you just added, and right click it to activate pop-up menu. Click **Modify** in the pop-up menu. Material Wizard window shows.

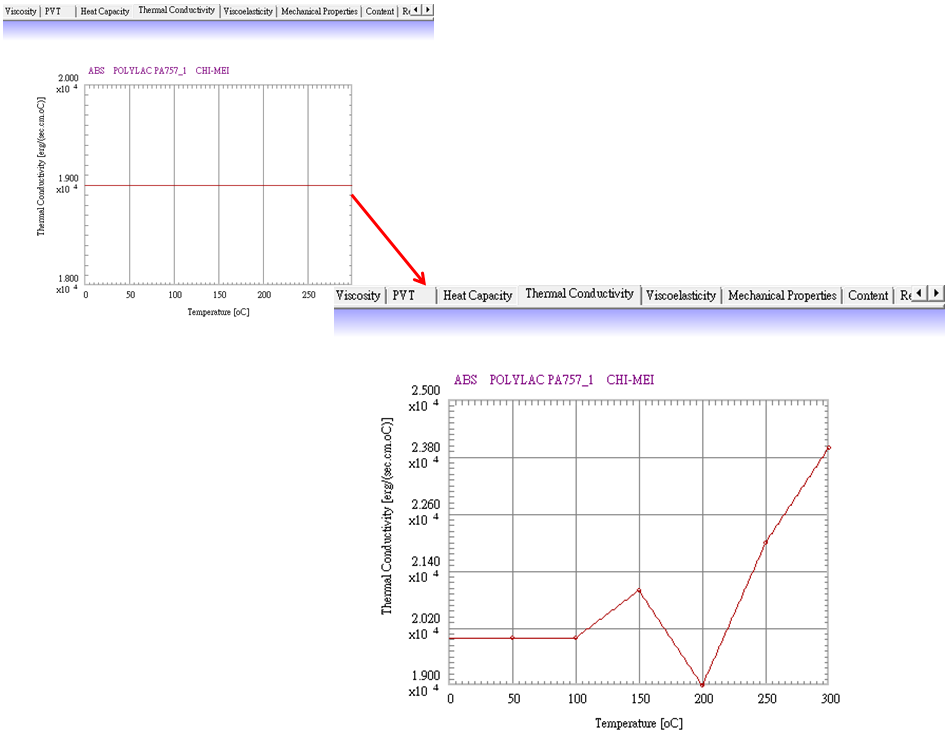




1. Click **Next** on Material Wizard till Step 5: Thermal conductivity. Select the model from the dropmenu as Tabulated Data, and input data on the table.

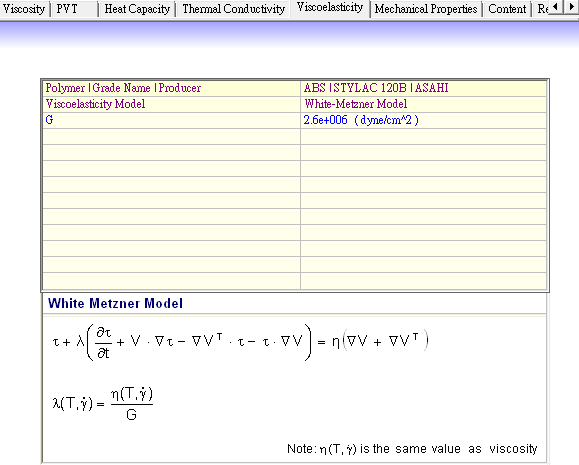


1. Click **Next** to the last step. Click **Finish** to exit the wizard. The chart of heat capacity changes accordingly.



Viscoelasticity

It shows the parameters and values of selected viscoelasticity model for the selected material. Select a material with the equation of selected viscoelasticity model is shown as well. Viscoelasticity is only available for materials with viscoelastic properties.



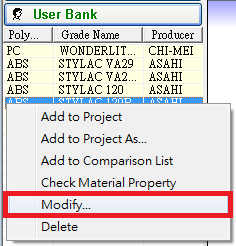
Viscoelasticity of polymeric fluids or melts is very complicated. This feature shows very important effects in our real life, such as normal stress effects, elastic effects, and so on and they can be significant sometimes. In order to have injection products of better quality, it is necessary to understand what the physical behaviors of viscoelasticity are during the processing.

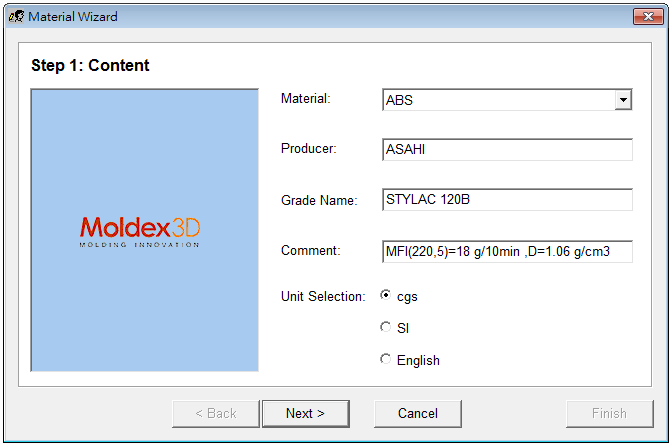
For further information about Viscoelasticity, refer to Material in Reference.

Modify viscoelastic parameters

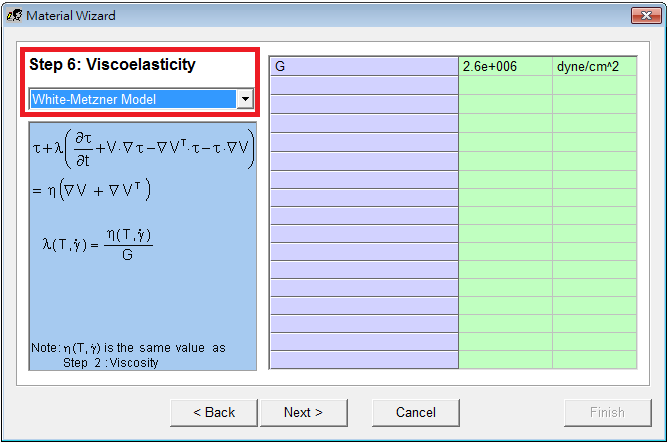
Moldex3D provides five viscoelastic models, White-Metzner model, White-Metzner model (Modified), PTT model, Giesekus model and Oldroyd-B model, which you can select for the material viscoelastic parameter change. Following is an example to display the modification procedures.

1. Select the material you want to change, and right click it to activate pop-up menu. Click **Modify** in the pop-up menu. Material Wizard window shows.

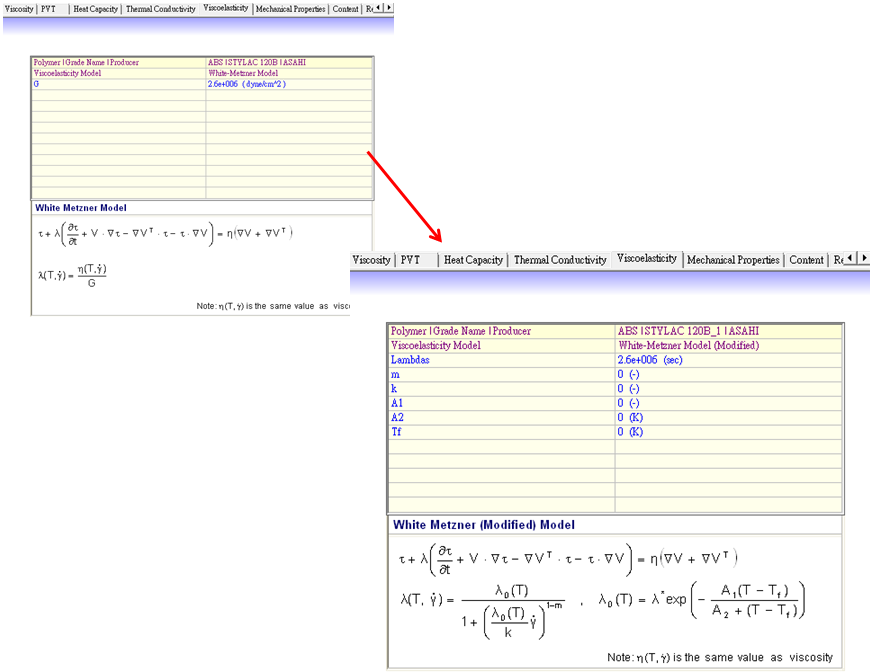




1. Click **Next** on Material Wizard till Step 6: Thermal conductivity. Select the model from the dropmenu as Tabulated Data, and input data on the table.



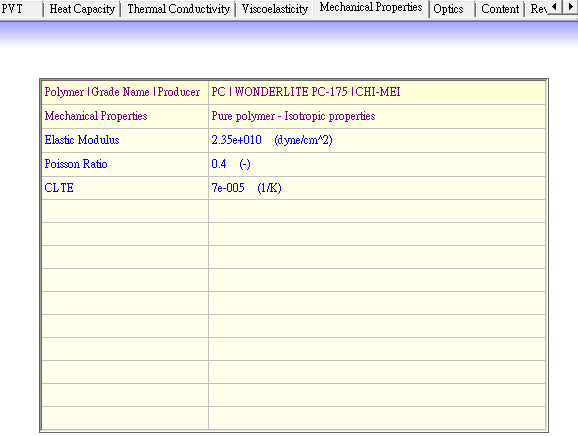
1. Click **Next** to the last step. Click **Finish** to exit the wizard. The chart of heat capacity changes accordingly.



Mechanical Properties

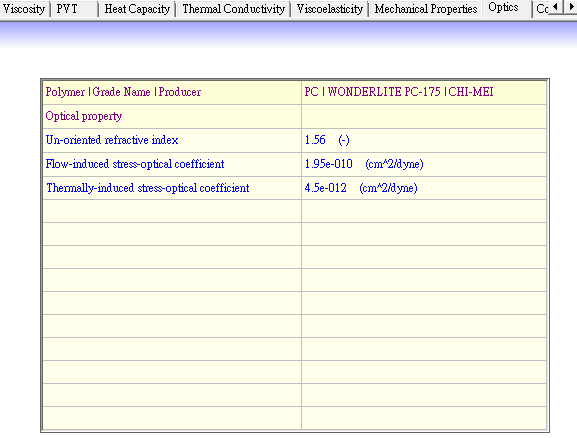
It shows the mechanical properties, including Poisson’s ratios (PR), the elastic modulus (EM), and the CLTE (Coefficient of Linear Thermal Expansion) when users click the **Mechanical** tab. If the material is mixed with fiber or flake, the property information of fiber or flake will show as well.

For more information about Mechanical Property, refer to Material in Reference.



Optics

It shows the optical properties, including un-oriented refractive index, flow-induced stress-optical coefficient and thermally-induced stress-optical coefficient. Optics is only available for materials with optical properties.



The optical polarize ability of a polymeric molecular chain is anisotropic, which means refractive index is different in the direction along and transverse to the molecular backbone. The anisotropy is determined by the material characteristics, i.e. chemical configuration and conformation of the chain, and also by the conditions during the processing, i.e. molding condition and mold design. The anisotropic refractive index is known as birefringence, which greatly affects optical properties and has been regarded as a crucial factor in optical product development.

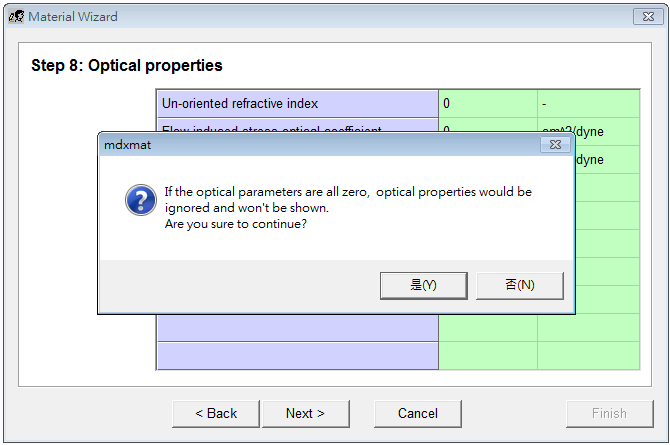
The birefringence in optical parts is primarily caused by two reasons. One is the flow-induced residual stress attributed to molecular orientation during filling. The other is the thermal residual stress due to a non-equilibrium contraction and volume relaxation. Birefringence is generally considered being mainly affected by flow kinematics and temperature during the whole process including filling, packing and cooling stages.

For further information about Optics, refer to Material in Reference.

Modify the optical parameters

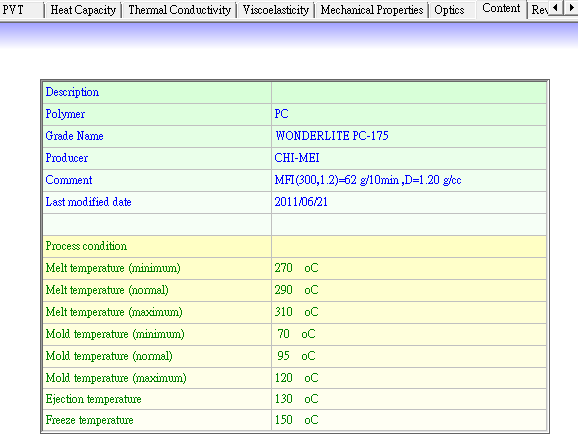
Follow the same steps to modify material property as previously described.

Select a material in User Bank, and click **Modify**. In Step 8: Optical properties, enter proper values. If all values are set as zero, a warning message shows. Click **Yes** to continue, and optics tab will not appear for the material after the modification.



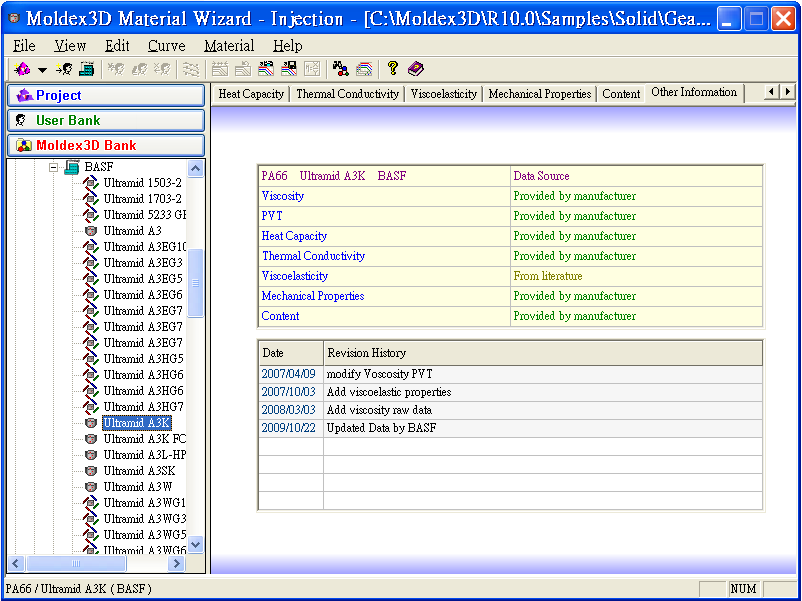
Content

It shows the summary properties of the selected material. It contains basic information, MFI information, and the general conditions for melt and mold temperatures when users click the **Content** tab.



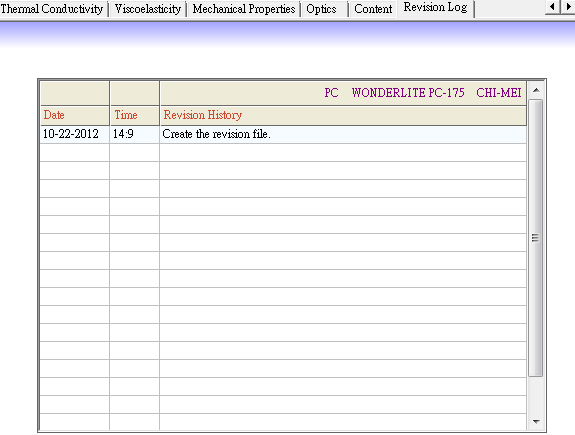
Other Information

It is available only when you switch **Moldex3D Bank**. It shows the data sources of the previous tabs and the revision history of the selected material.



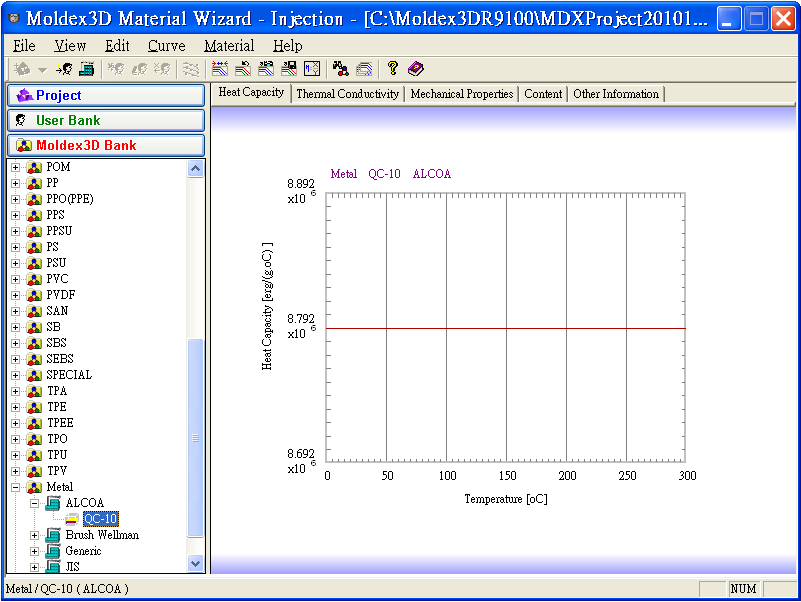
Revision Log

It is only available in User Bank, that is where any material modification made by users is recorded.



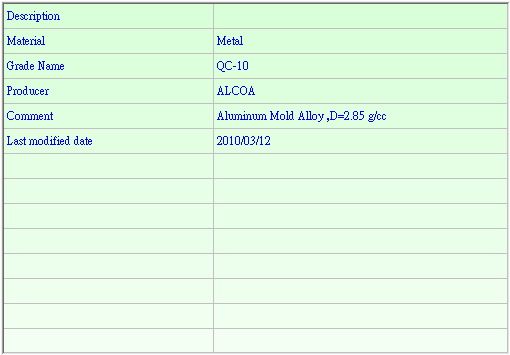
Material Data Window of Metal/Coolant Materials

Information about metal/coolant materials is slightly different from polymer materials in **Moldex3D** Bank. Viscosity and PVT tabs are not included in information of metal/coolant materials. In the figure below, it shows the material data information of a metal material, Nichel.



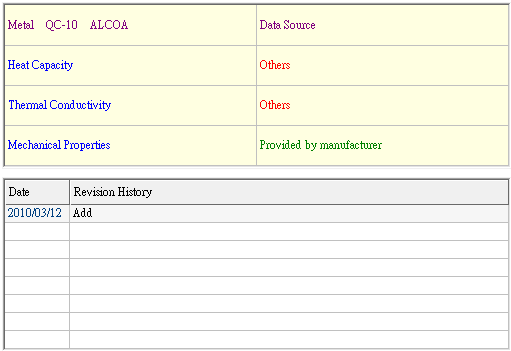
Content tab of Metal/Coolant

Content tab in Metal/Coolant materials is as figure below.



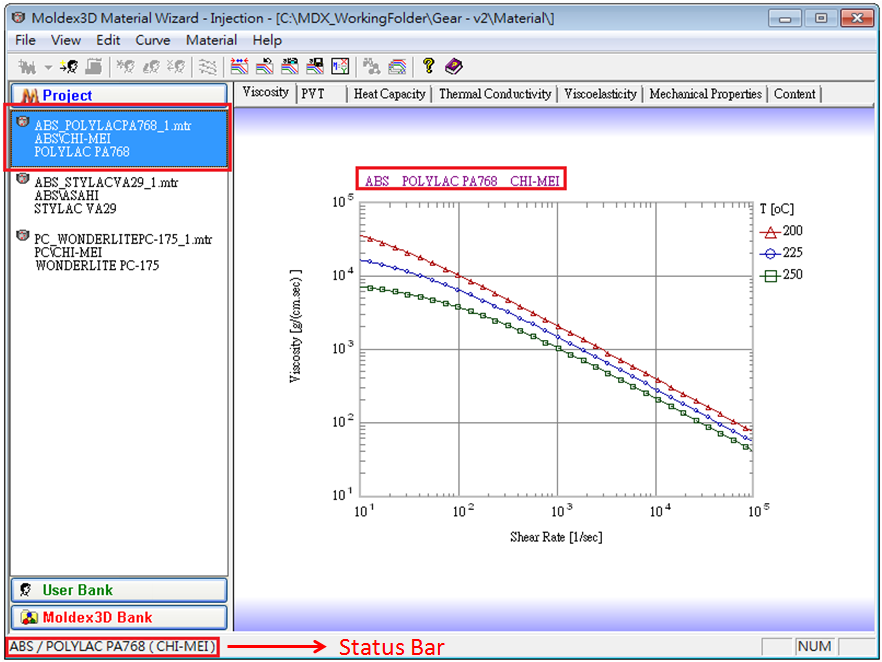
* Other information tab of Metal/Coolant

Other Information tab in Metal/Coolant material is as figure below.



Status Bar

Status bar is on the bottom of Material Wizard window. It shows the material name you select.



Create a New Material File

A new material creation is available only when switch to User Bank.

Switch to User Bank, and click **Edit > New** in menu bar, or click **New**  to generate a new material file in **User Bank**. Follow the steps below to complete a new material file when Material Wizard shows.

Material Wizard provides two options to create a new material file,

Custom: If you have property data of a new material, you can select Custom to add the property data into Material Wizard.

From Exterior Sources: If you find a new material in other sources, you can convert other format of the material file into Moldex3D format of the material file.

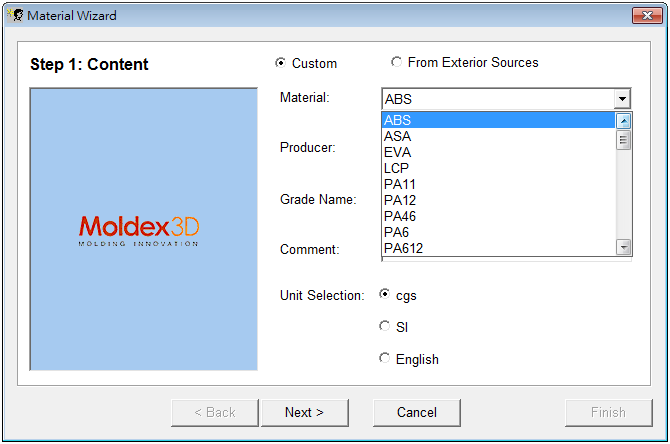
Following shows how to add new material by each way.

Custom

Step 1: Content

Select **Custom**. Input information, such as Polymer, Producer, Grade Name, Comment, and Unit Selection.

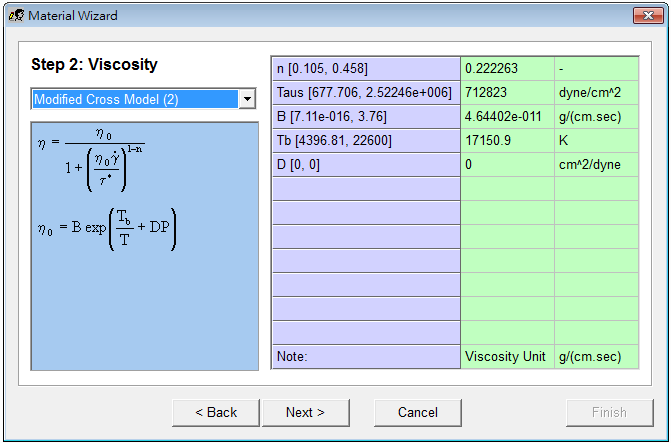
Choose a material type from the dropdown list, and Material Wizard will provide the statistics data from Moldex3D database in each of the following steps. You can change the parameters in each step according to your own data.



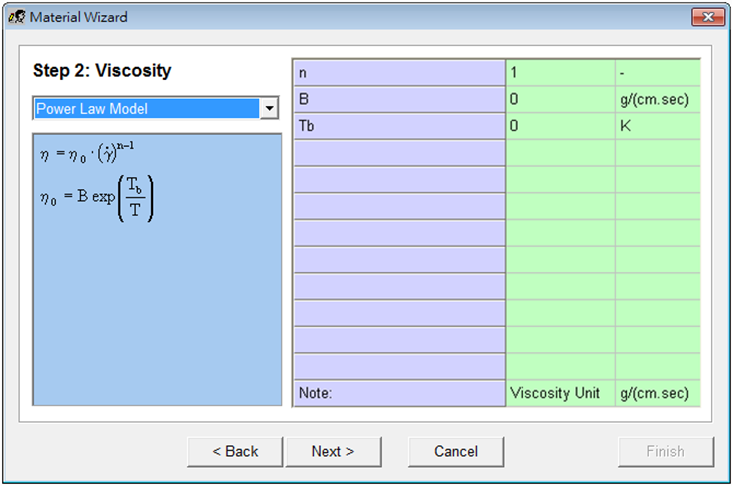
Note that the material list is not restricted to polymer material, and it depends on the object attribute you set in Moldex3D-Mesh or Designer. For example, in an encapsulation case, wire, lead frame, chip and other objects are set and needed to assign their material information or property by creating a new material file or modifying an old material file in Material Wizard.

Step 2: Viscosity

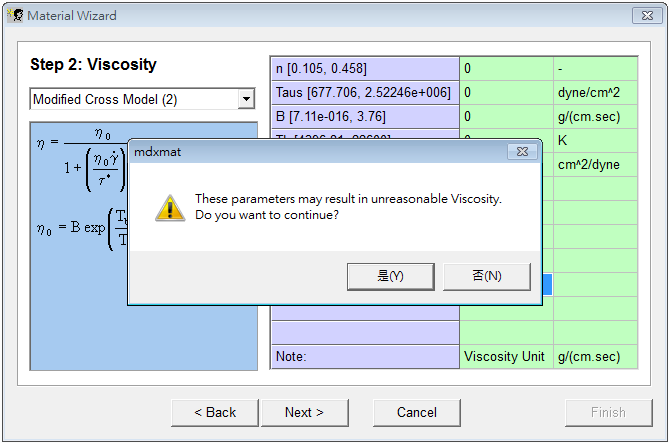
Based on the material you select in Step 1, Material Wizard will provide reference model and parameters those are adopted by more than 20 materials in the same type. You can keep default or modify them per your need.



Sometimes, if the data is not enough, the parameter won’t show on the table as the figure shows below.



Besides, Material Wizard will check the data you input. If the data is not reasonable, a warning message will pop up.



The procedures in the following steps are similar to that described in Step 2. Complete the data input in all steps, and click **Finish**.

The table below displays a brief required input data for each step.

|  |  |  |
| --- | --- | --- |
| Step | Title | Input |
| Step1 | Content | Polymer, Producer, Grade Name, Comment and Unit Selection |
| Step2 | Viscosity | Viscosity model and parameters |
| Step3 | PVT | PVT model and parameters |
| Step4 | Heat Capacity | Heat capacity model and parameters |
| Step5 | Thermal Conductivity | Thermal conductivity model and parameters |
| Step6 | Mechanical properties | For pure polymer with isotropic  Elastic modulus model and parameters  Poisson ratio model and parameters  CLTE  model and parameters  For pure polymer with anisotropic  Poisson’s ratio  Elastic modulus  Shear Modulus  CLTE  Filler-filled polymer  Poisson’s ratio  Elastic modulus  Shear Modulus  CLTE  Other parameters setting |
| Step7 | Process condition | Process condition |

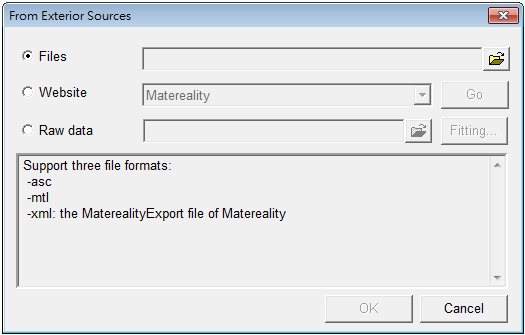
From Exterior Sources

There are three ways to add new material data from exterior sources: from files, from website and from raw data.

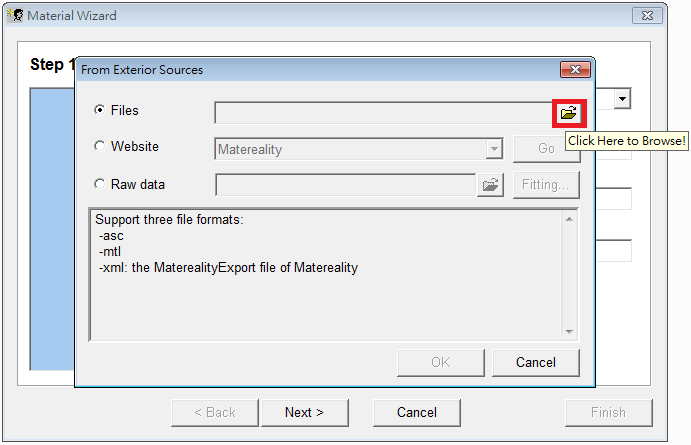
From Files

Moldex3D Material supports files in 3 file formats, \*.asc, \*.mtl and \*.xml. After loading the file in appropriate format, Material Wizard will convert it into Moldex3D material format automatically.

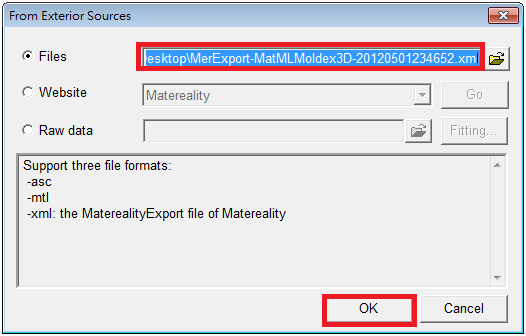
Step 1: Click **From Exterior Sources** to open processing window.



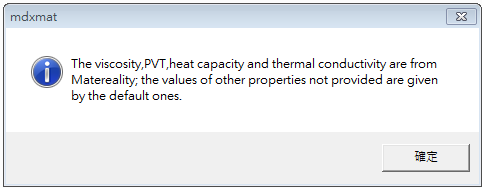
Step 2: Select **Files**, and click 13.png. Open the material file you want to add into User Bank.



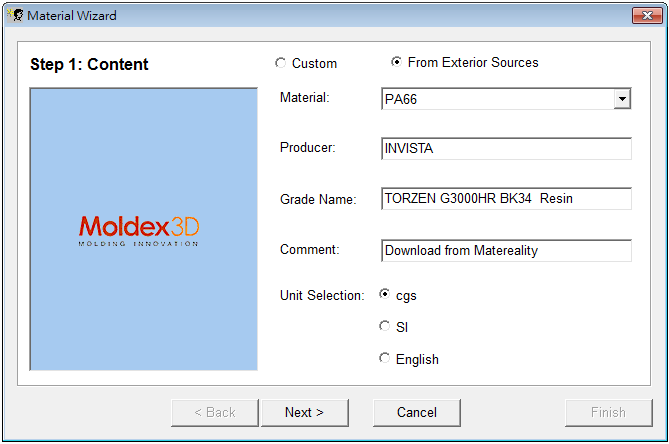
After loading the file, click **OK**.



After clicking OK, an information window shows. You can view what data is loaded into Material Wizard.



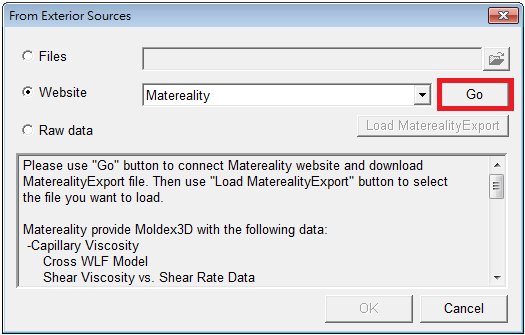
Step 3: The material data loaded from Matereality input automatically displays in boxes as figure below. Click **Next** to finish the following steps, and modify the property parameters per your need.



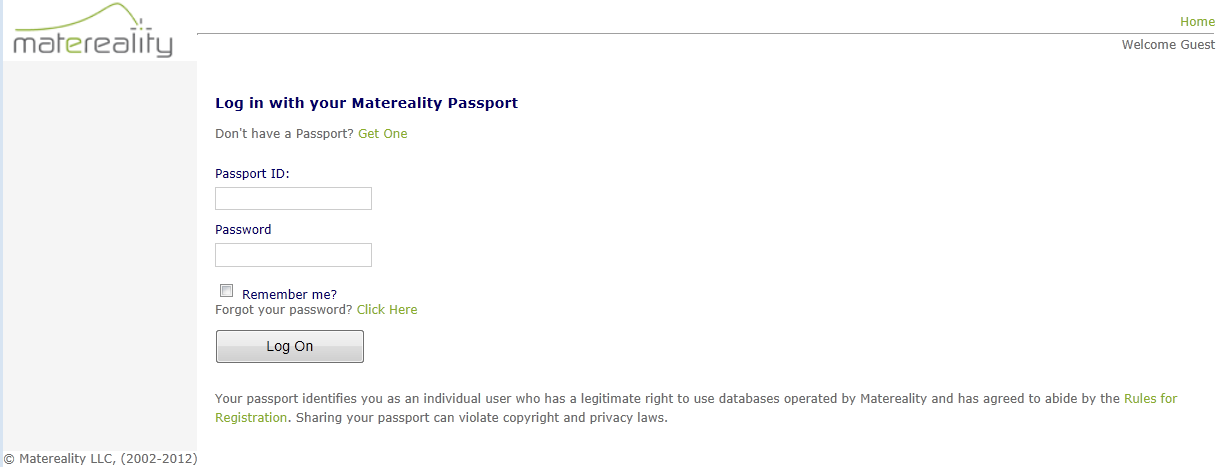
From Material Data Center website

You can import a new material from Matereality, which is a material data center website displayed in Material Wizard.

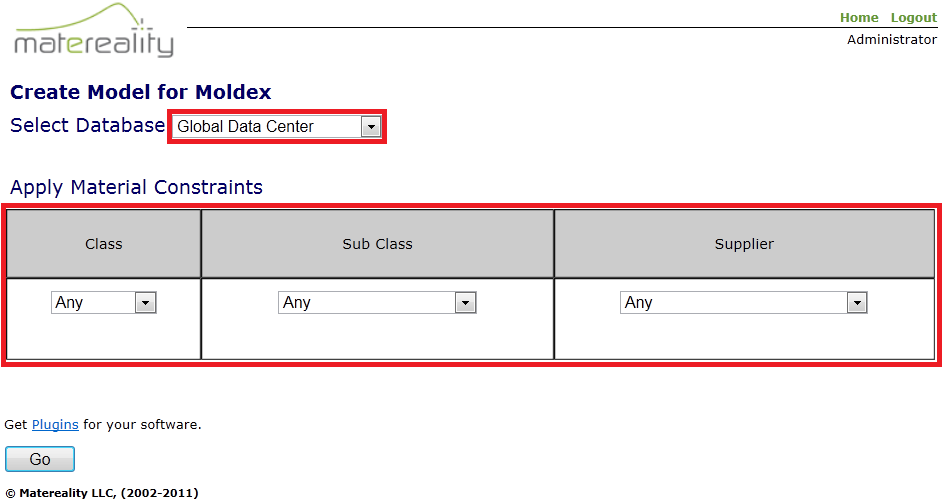
Step 1: Select **Website**, and click **Go** to link Matereality website.



Step 2: Matereality website shows. Input your own [registered](http://tw.rd.yahoo.com/_ylt=A3eg.8_ZAIlQ6jkA0.fhbB4J/SIG=12smc29rp/EXP=1351184729/**http%3a/tw.dictionary.yahoo.com/dictionary%3fp=registered%26docid=1084901) Passport ID and Password, and click Log on.



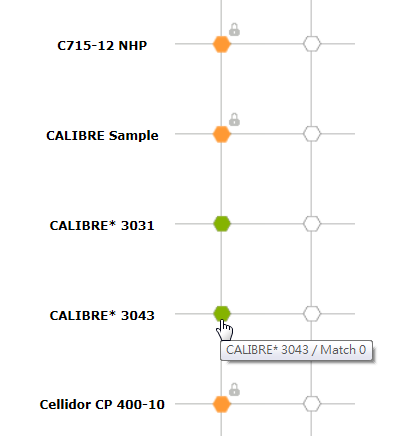
Step 3: Search the material you want to add into User Bank.



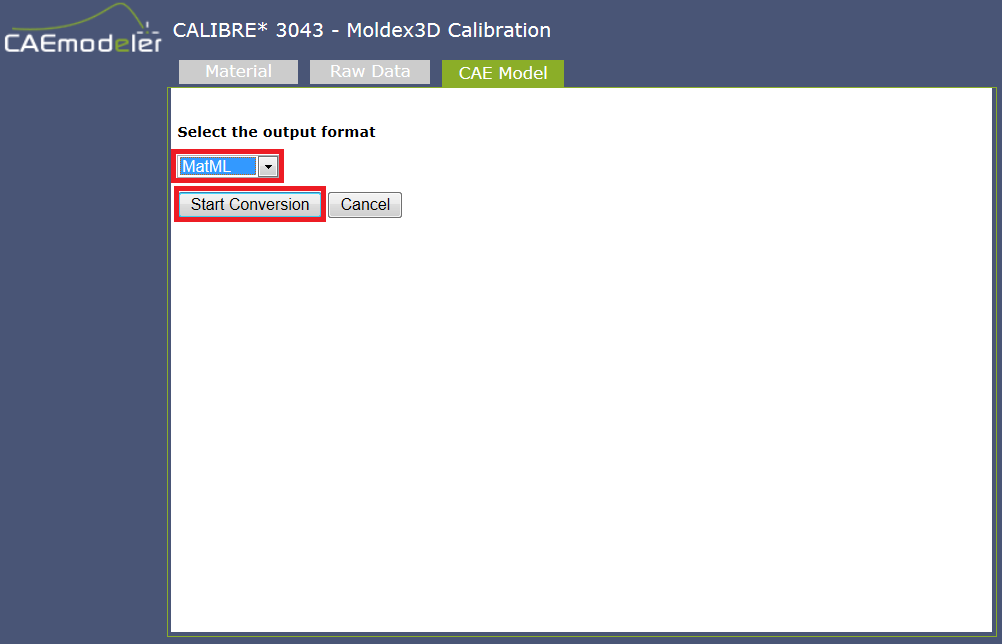
Select database, class, sub class, and supplier in each dropmenu.

After selection, click **Go**.

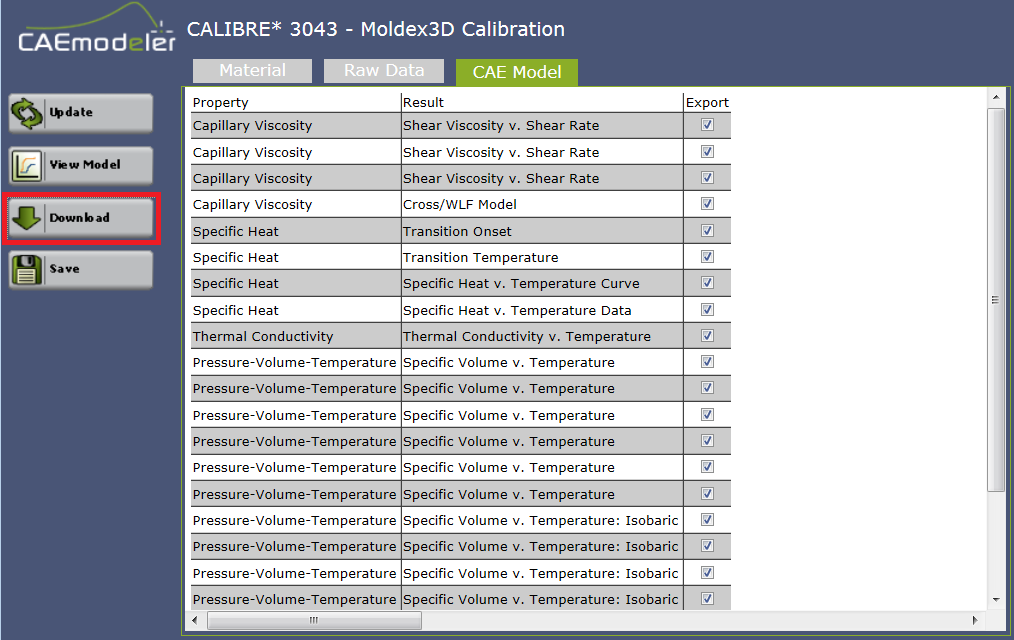
Step 4: The available materials will show on the window. Material with green point means its data is free to use. Click the green point of the material you want.



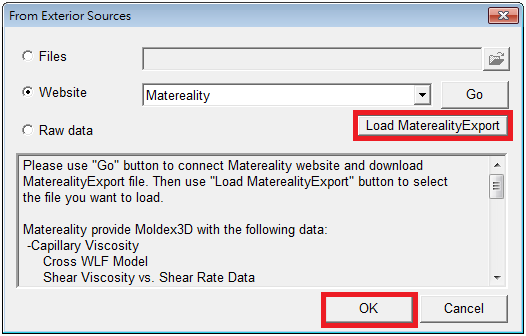
Step 5: Output window shows. Select **MatML** as the output format from the dropmenu. And click **Start Conversion**.



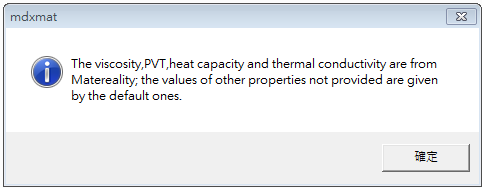
Step 6: The material data in MatML format shows. Some options list on the left for you to select. Select Download to download the material in your computer.



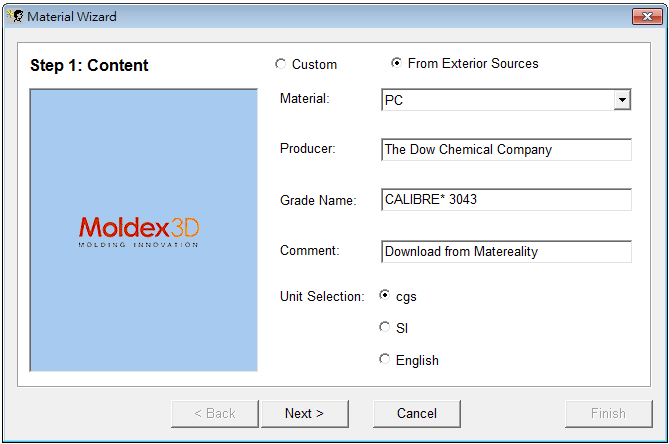
Step 7: Back to Material Wizard. Click **Load MaterealityExport** to load the \*.xml file you just download from Matereality Website. And click **OK** to get back to the main window of Material Wizard.



After clicking OK, an information window shows. You can view what data is loaded into Material Wizard.



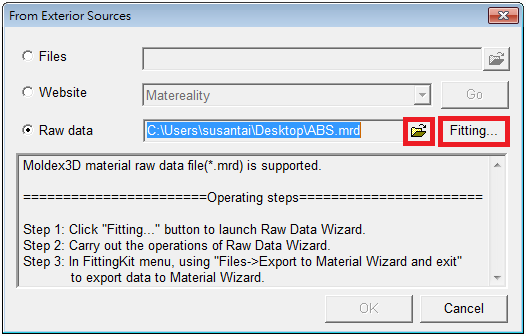
Step 8: The material data loaded from Matereality input automatically displays in boxes as figure below. Click **Next** to finish the following steps, and modify the property parameters per your need.



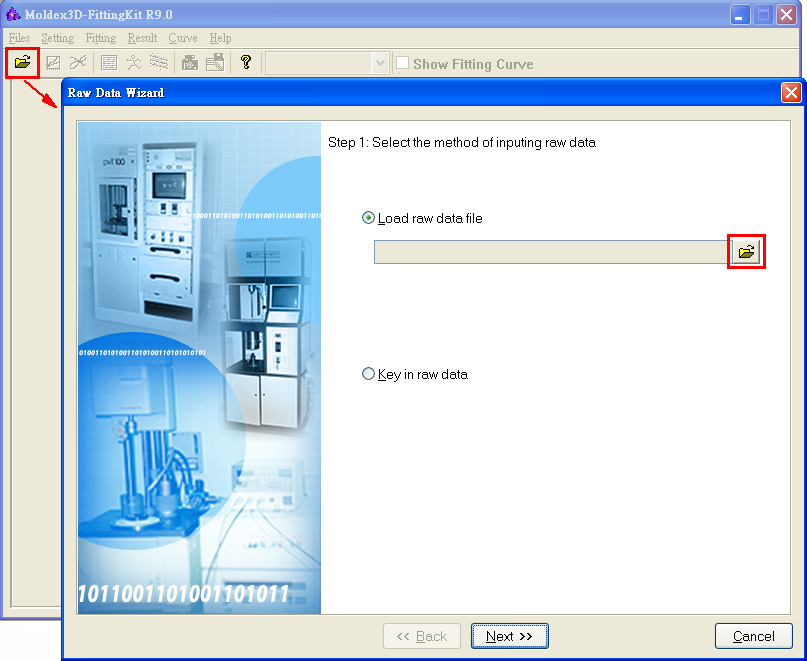
From Raw data

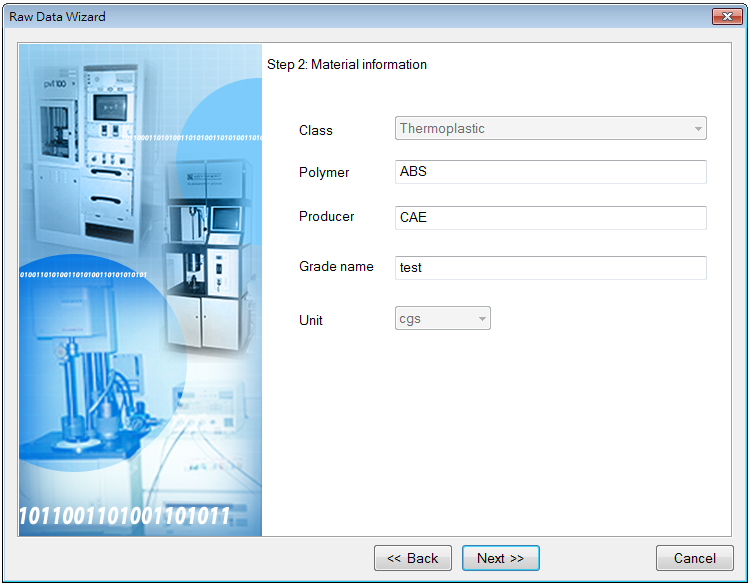
Moldex3D provides Raw Data Wizard that allows you to get model parameters from raw data. Follow steps will guide you to add a new material from raw data.

Step 1: Click 13.png to load the material raw data, and then click **Fitting**.

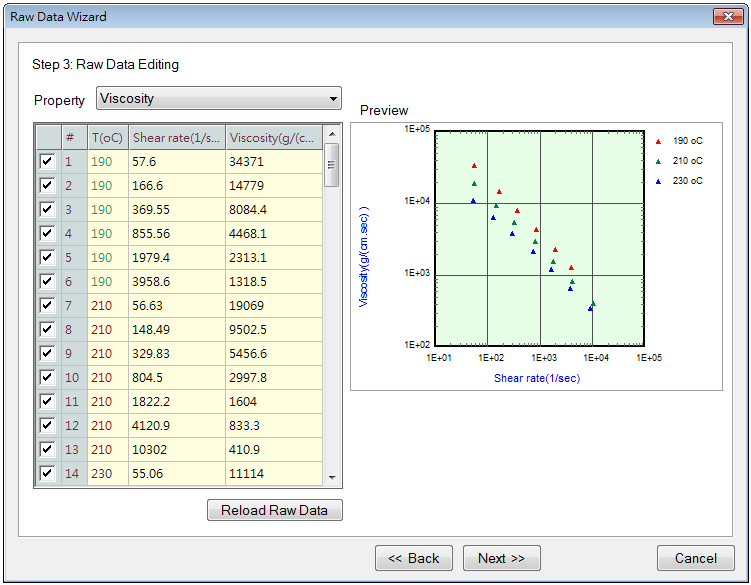


Step 2: Raw Data Wizard pops up. Select **Load raw data file**, and click **Next**.

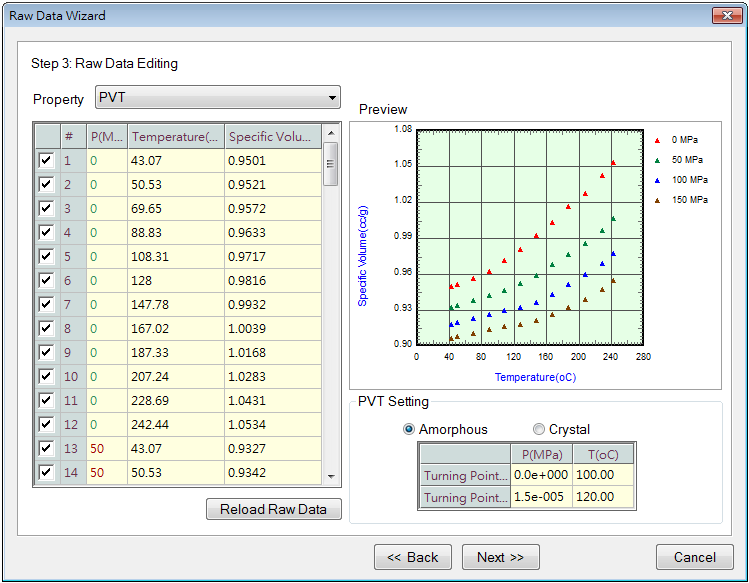




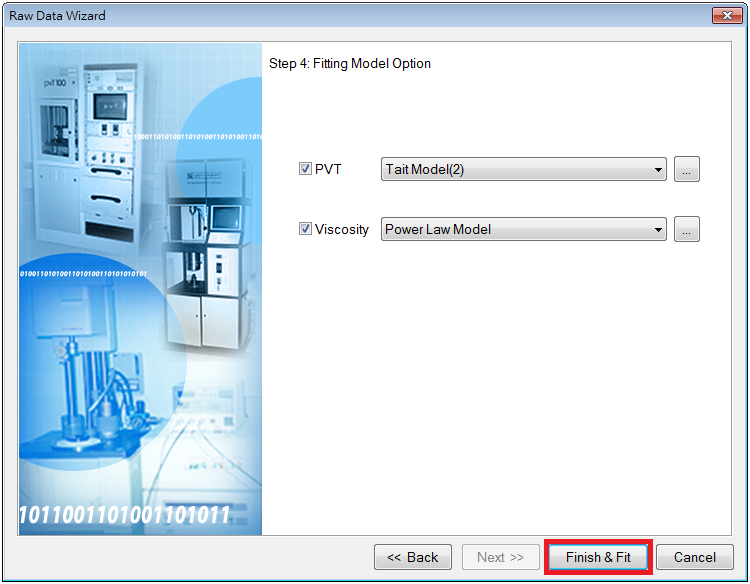
Step 3: Edit raw data and preview the data points for viscosity and PVT.



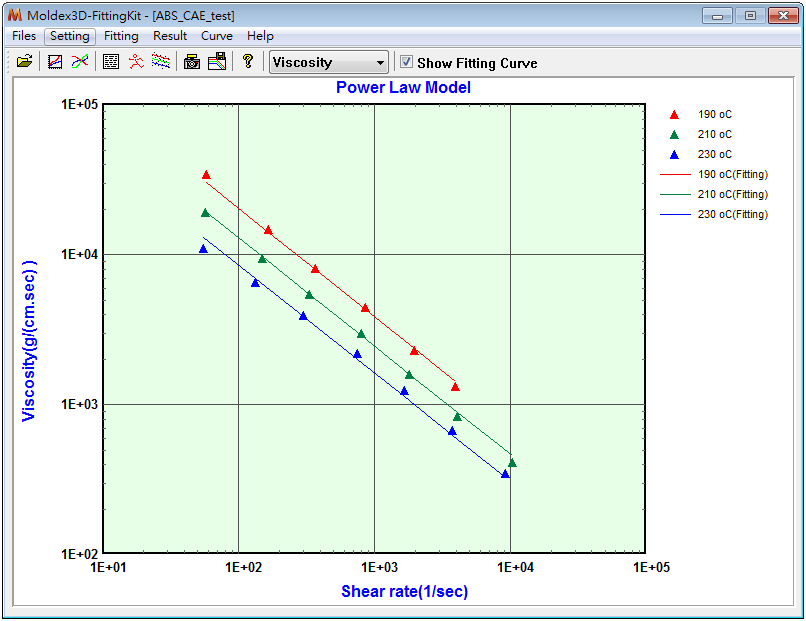
When select the property as PVT, there is a table that you can select the plastic as either Amorphous or Crystal, and enter the pressure and temperature of turning points.

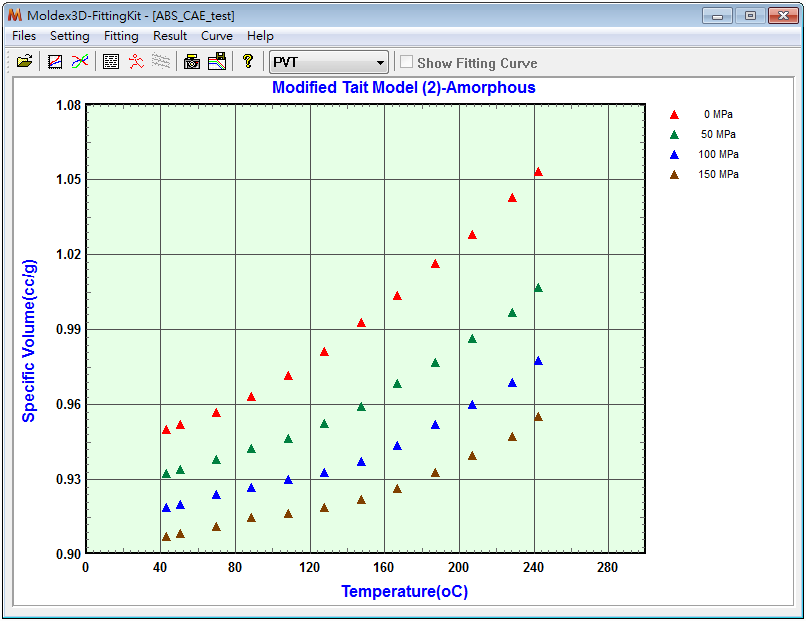


Step 4: Select the fitting models for PVT and Viscosity, and then click Finish & Fit.

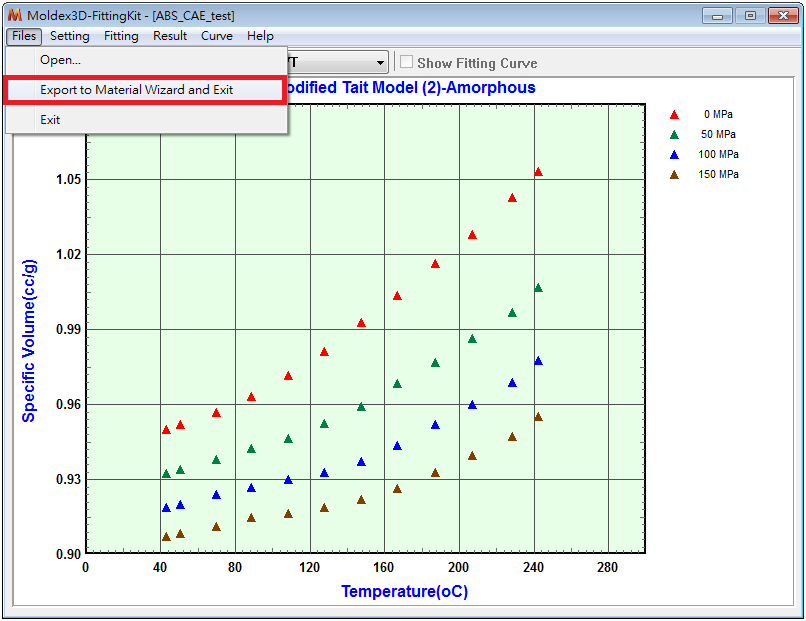


View the fitting results.

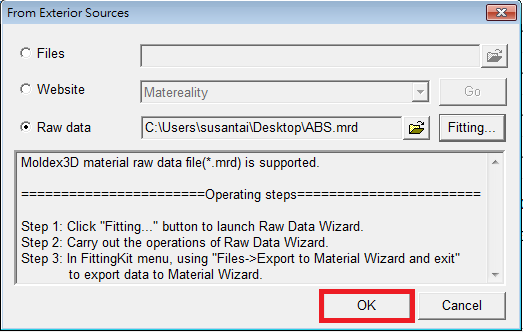




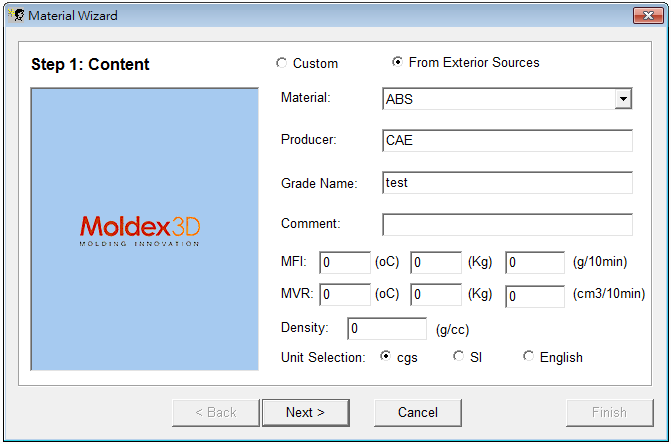
Step 5: After the fitting is complete, click **Export to Material Wizard and exit** from File to export material.



Back to the window, click **OK**.



Step 6: The material data fitted from raw data automatically displays in boxes as figure below. Click **Next** to finish the following steps, and modify the property parameters per your need.

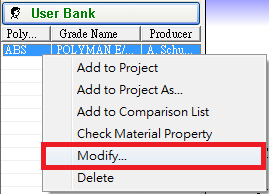


Modify the Material Information

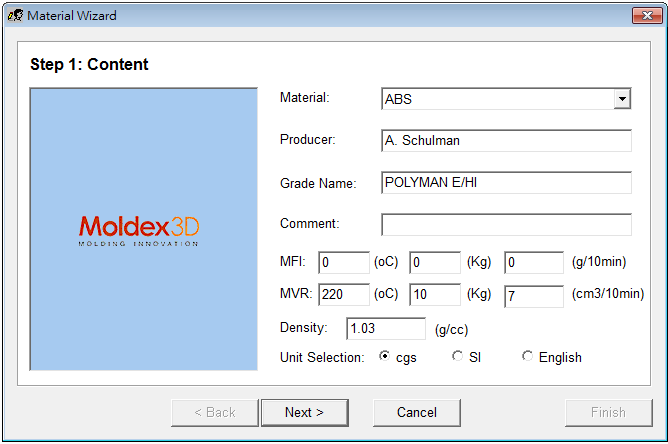
A material modification is available only when switch to User Bank.

Besides adding new material, you can modify the material information as well.

Switch to **User Bank**, right click the material you want to modify, and click **Modify** from the pop-up menu.



Then it shows.



The general steps for modification of a material file in **User Bank** can be summarized as the following table.

Click **Next** to the property you want to modify. Complete the modification, and click **Finish**.

The table below displays a brief possible modification input for each step.

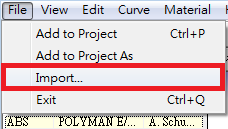
The procedures for modification of the materials in User Bank

|  |  |  |
| --- | --- | --- |
| Step | Title | Input |
| Step1 | Content | Polymer, Producer, Grade Name, Comment and Unit Selection |
| Step2 | Viscosity | Viscosity model and parameters |
| Step3 | PVT | PVT model and parameters |
| Step4 | Heat Capacity | Heat capacity model and parameters |
| Step5 | Thermal Conductivity | Thermal conductivity model and parameters |
| Step 6 | Viscoelasticity | Viscoelasticity model and parameters |
| Step7 | Mechanical properties | For pure polymer with isotropic  Elastic modulus model and parameters  Poisson ratio model and parameters  CLTE  model and parameters  For pure polymer with anisotropic  Poisson’s ratio  Elastic modulus  Shear Modulus  CLTE  Filler-filled polymer  Poisson’s ratio  Elastic modulus  Shear Modulus  CLTE  Other parameters setting |
| Step 8 | Optical properties | Optical parameters |
| Step9 | Process condition | Process condition |

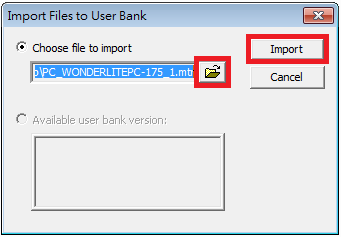
Import Material File

A material import is available only when switch to User Bank.

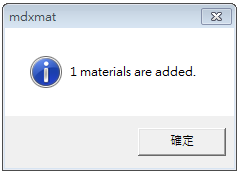
Switch to User Bank, click **File**, and select **Import**.



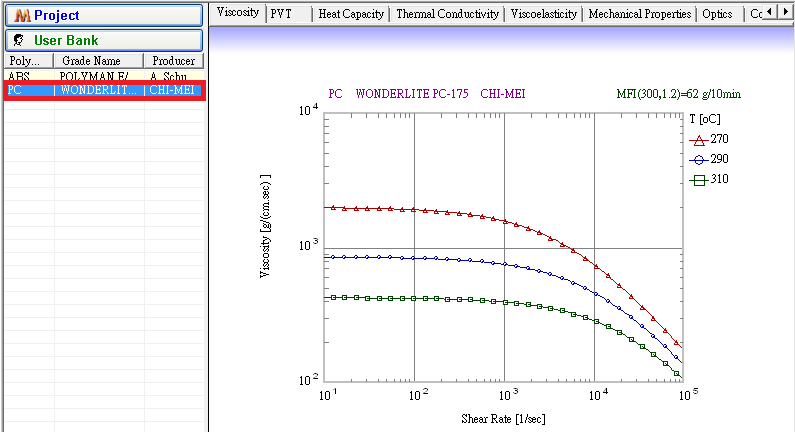
A pop-up menu shows. Click 13.png to import the material file. And click **Import**.



A confirmation window shows that the material is added. Click **OK**.



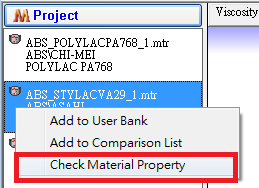
The material you just imported will show on the list of User Bank.



Check Material Property

This function is available only when switch to Project or User Bank.

Switch to Project or User Bank, right click the material you want to check its material property, and click **Check Material Property** in the pop-up menu.



Material Checking Kit pops up. You can view Checking list and Checking result for each property. The green check mark 50.pngmeans there is no problem. If 51.png shows, it means something wrong with the property. 52.pngrepresents no value is found.

