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## User manual

How to use this piece of software....

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Add new PCM, TCM Material by choosing the Data base in the headline

Choose PCM Database



Stefan Gschwander ▼

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## Welcome to the Task 42 / Annex 29 PCM-Database

by [Stefan Gschwander](#) — last modified Nov 26, 2014 09:12 AM — [History](#)

This Database has been developed within the IEA-Task/Annex 42/29 (<http://task42.iea-shc.org/>)

This database is designed to provide PCM characteristics data like enthalpy, density, viscosity, etc. in dependency on temperature.

PCM-Data can also be uploaded if the data is acquisitioned according defined measurement standards which are available under "Measurement-Standards".

Please contact **Stefan Gschwander** ([stefan.gschwander@ise.fraunhofer.de](mailto:stefan.gschwander@ise.fraunhofer.de)) if you want to get access to the database.

[Manage portlets](#)

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## Material Database PCM:

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### Pcm materials

by zope — last modified May 18, 2015 10:41 AM — History

Show 10 entries

Name	Institution	Last Change	Melting Temperature [°C]	Heat of Fusion [kJ/kg]	Density (liquid) [kg/m <sup>3</sup> ]	Thermal Conductivity (liquid) [W/mK]	Viscosity (liquid) [mPas]
HDPE natur NT D960/6	Austrian Institute of Technology	Sep 04, 2015	127.7	215.8			
HDPE natur NT D960/6	Fraunhofer ISE	Sep 03, 2015	128.0	219.0			
HDPE natur NT D960/6	ZAE-Bayern	Sep 04, 2015	129.01	215.5			
HDPE natur NT D960/6	University of Lleida	Sep 07, 2015	126.77	221.3			
Octadecan Parafol 18-97	Fraunhofer ISE	Jul 07, 2015	27.35	231.3			
Octadecane 97%	Universität Bayreuth	Aug 12, 2015	27.7	226.6			
Octadecane 97% Parafol 18-97	Austrian Institute of Technology	Aug 11, 2015	27.0	231.5			
Octadecane Parafol 18-97 Udl 2015	University of Lleida	Aug 24, 2015	26.3	233.9			
Octadecane Parafol 18-97_ZAE_2015	ZAE-Bayern	Jun 30, 2015	27.23	233.1			
RT 70 HC	Fraunhofer ISE	Sep 03, 2015	70.1	256.4			

Showing 1 to 10 of 16 entries

Manage portlets

Choose to add new PCM

Previous Next

Red square mark mandatory field

Choose an enthalpy curve. Format .jpg, .gif or .png

## Material overview for the table presented first:

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### Add PCM

A phase change material

**Name** ■

**Description**

**Institution** ■  
filled automatically

**Enthalpy curve** ■  
Please upload an image  
Durchsuchen... Keine Datei ausgewählt. ■

**Melting temperature** ■  
[°C]

**Melting enthalpy** ■  
[kJ/kg]

**Density (liquid)**  
[kg/m<sup>3</sup>]

⇒ Save when you have filled all fields



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Info success Item created

## Showcase

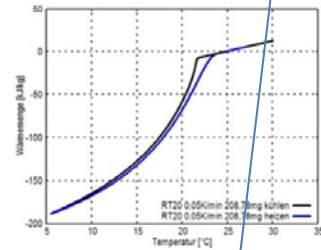
by Stefan Gschwander — last modified Sep 18, 2015 03:25 PM — History

### Material details

Type	paraffin
Manufacturer	Rubitherm
Added by	n.n.

- [Safety sheets](#)
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Manage portlets



Add new measurement:

One PCM requires 3 samples to measure.  
Add for each sample a new measurement.

Actions Display Add new... State: Private

- Density measurement
- Enthalpy measurement
- Thermal conductivity measurement
- Viscosity measurement

Example: Add Enthalpy measurement:

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## Add Enthalpy measurement

Enthalpy

Measurement Category

**Enthalpy (t)**

Measurement device

Comment on the measurement

Measured by (Institution)

Enthalpy curve

Please upload an image

Durchsuchen... Keine Datei ausgewählt.

Heating rate

[K/min]

Cooling rate

[K/min]

Enthalpy diagram, might be the same then before

You have to give several deviations for your results. Choose the standard deviation calculated for the measurement done for this sample

Give the name of your device

⇒ Save when you have filled all field

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## Enthalpy (T)

by Stefan Gschwander — last modified Sep 18, 2015 03:40 PM — History

### Measurement details

Measured with	μDSC III
By:	Fraunhofer ISE
Additional Comments	

- Heating rate : 1.0 [K/min]
- Cooling rate : 1.0 [K/min]
- Sample mass : 200.0 [mg]
- Heat of fusion : 200.0 [kJ/kg] - deviation : 5.0 [kJ/kg]
  - Integration range, lower limit : 10.0 [°C]
  - Integration range, upper limit : 21.0 [°C]
  - Onset temperature : 15.0 [°C] - deviation : 0.5 [°C]
  - Offset temperature : 20.0 [°C] - deviation : 0.5 [°C]
- Crystallization enthalpy : 195.0 [kJ/kg] - deviation : 10.0 [kJ/kg]
  - Integration range, lower limit : 6.0 [°C]
  - Integration range, upper limit : 18.0 [°C]
  - Onset : 16.0 [°C] - deviation : 0.8 [°C]
  - Offset : 8.0 [°C] - deviation : 0.7 [°C]

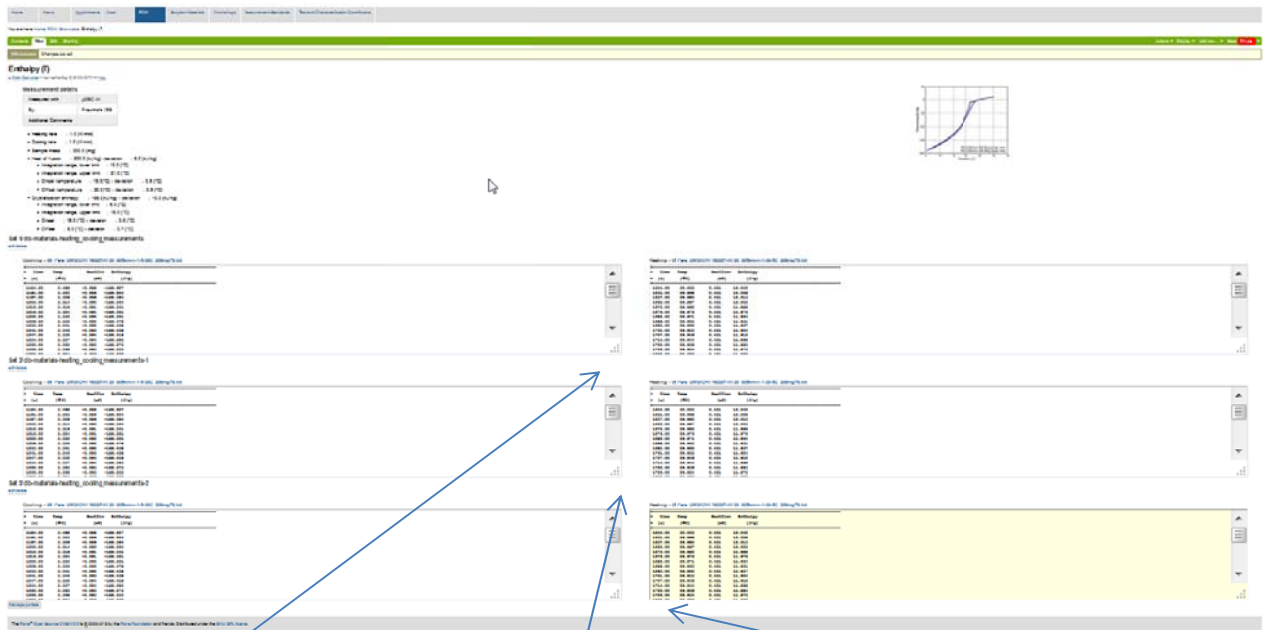
Add new heating and cooling measurement:

Each sample requires at least 3 measurement cycles. Add for each heating and cooling cycle a new heating cooling measurement.

Actions Display Add new... State: Private

heating cooling measurement

Data is saved and look like:



3. measurement

2. measurement

1. measurement

Add safety sheets:



Stefan Gschwander  
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**Safety sheets**  
 by Stefan Gschwander — last modified Oct 25, 2012 02:14 PM — History  
 There are currently no items in this folder.

- Collection
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Lets you upload a file

Choose folder

Choose file  
 To upload a PDF

To delete data: Go back to the PCM materials database

Choose under Contents your material to delete it.



Stefan Gschwander ▾

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## PCM materials

by plone — last modified Sep 17, 2012 09:13 AM

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Select: All

	Title	Size	Modified	State
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<input type="checkbox"/>	RT20	0 kB	Oct 25, 2012 01:33 PM	Private
<input checked="" type="checkbox"/>	RT20x	0 kB	Oct 25, 2012 02:55 PM	Private