Product information

Solarliquid L Konzentrat

Eco-friendly, long-therm antifreeze concentrate with corrosion inhibitors for thermal solar systems

Product data:

Appearance:	clear, slightly yellowish liquid	
Base:	1,2-Propandiol ; Monopropylenglykol	
Flashpoint (°C):	> 100	(ASTM-D 51758)
Boiling point (°C):	> 150	(ASTM-D 1120)
Density (20°C)	1,040 - 1,050 g/cm³	(DIN 51757)
Refractive index nD20:	1,43 - 1,44	
Thermal conductivity (20°C):	ca. 0,22 W/m*K	
pH-value specification (20°C):	7,5 - 8,5	(ASTM-D 1287)
Viscosity (20°C)	65 - 75 mm²/s	

Product features:

SOLARLIQUID L Konzentrat is an odorless liquid on basis of mono propylene glykol, which is used in thermal solar systems as a coolant or heat transfer fluid. The special corrosion inhibitors protect the commonly used metals and plastic materials- including copper and aluminium- from corrosion, film formation and deposition. This ensures the efficiency oft he plant and equipment.
Sealing materials are not corroded by **Solarliquid L Konzentrat**.

SOLARLIQUID L Konzentrat

- completely miscible with water. Reaching as delivered an anti-freeze >-50°C without segregate.
- **don´t dilute below 35% Solarliquid L Konzentrat share – corrosion safety.**
- miscible with all anti-freeze agents based on mono propylene glycol.
- free of nitrit, secondary amine, phosphate and borate.

General information:

It is important to ensure that the circulazion pump is adapted for use with antifreeze liquid.

The system should be flushed with water after compression test and all connections checked for leaks.

The system should be filled immediately after compression test with Solarliquid L gebrauchsfertig . No air fill!

Galvanized plant parts should be eliminated, e.g. zinc is inconsistant to glycols.

According to our operation experience, Solarliquid L Konzentrat can be stored for several years.

Corrosion and erosion rates in g/m² (according to ASTM D 1384):

Aluminium:	- 0,2
Soft solder:	1,0
Brass:	1,0
Copper:	0,8
Steel:	0,1
Cast iron:	- 0,4

Dilution table:

Solarliquid L Konzentrat	Water	Frost protection
35 Vol.%	**65 Vol.%**	**- 15°C**
40 Vol.%	**60 Vol.%**	**- 19°C**
45 Vol.%	**55 Vol.%**	**- 22°C**
50 Vol.%	**50 Vol.%**	**- 28°C**

Water requirements:

For use in vacuum tubes with stagnation temperatures greater than 200°Conly demineralized oder deionized water should be used. Fi only water is available, consider the following upper limits for water hardness:

0 – 10°dGH:	permitted without restriction
> 10°dGH:	Water must be demineralize to values below 10°dGH

Applications:

The optimum temperaturefor use is between -30°C and 170°C. We recommend using a concentration of 50% Solarliquid L Konzentat and 50% Water. At continuous temperatures above 170°C we recommend to install large enough reservoir to allow the heat transfer fluid flowing from the collectors.
At temperatures above 200°C a slow chemical change of the heat transfer fluid takes place, which can jeopardize the reliability of the system.

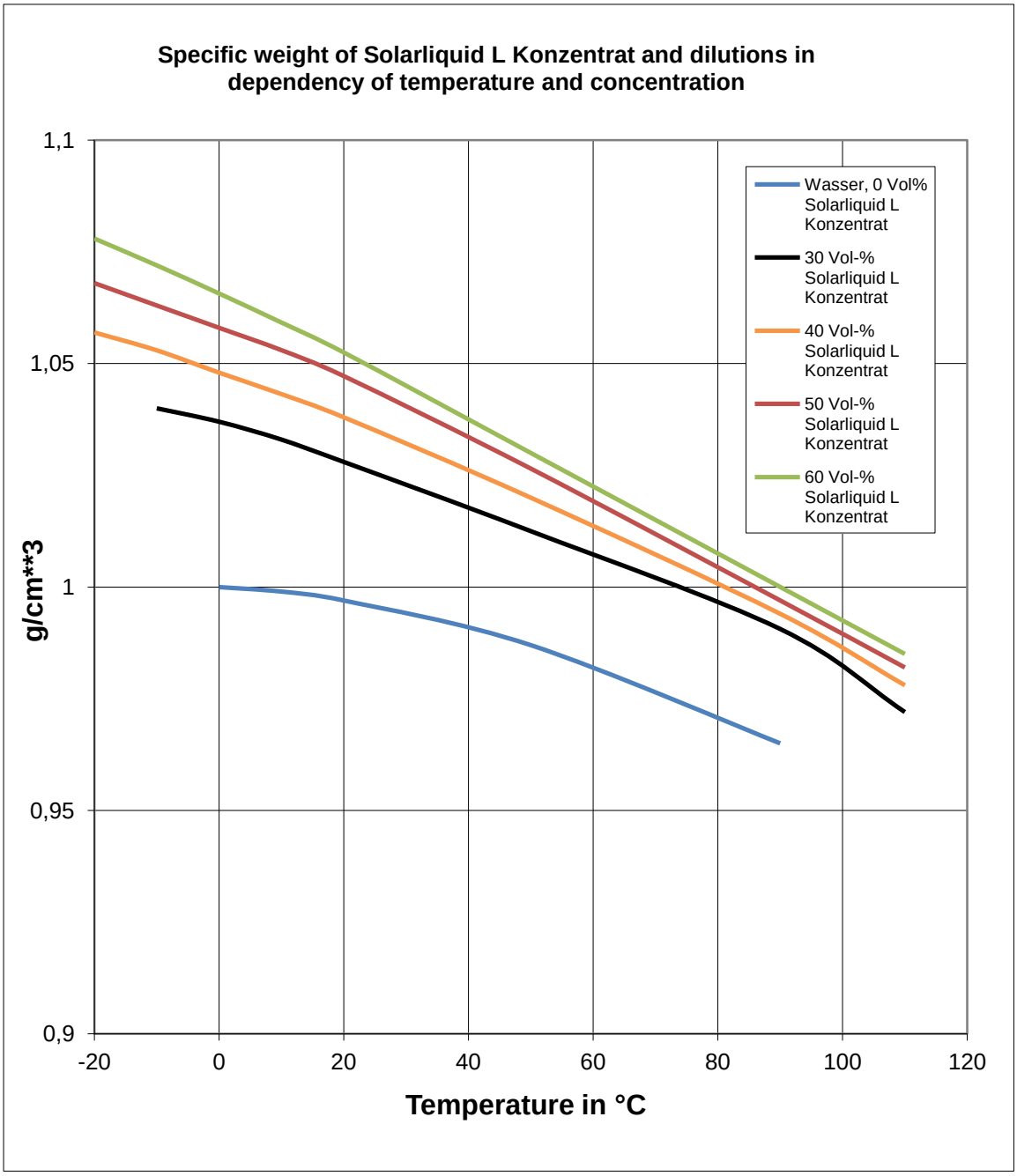
Test method of corrosion properties:

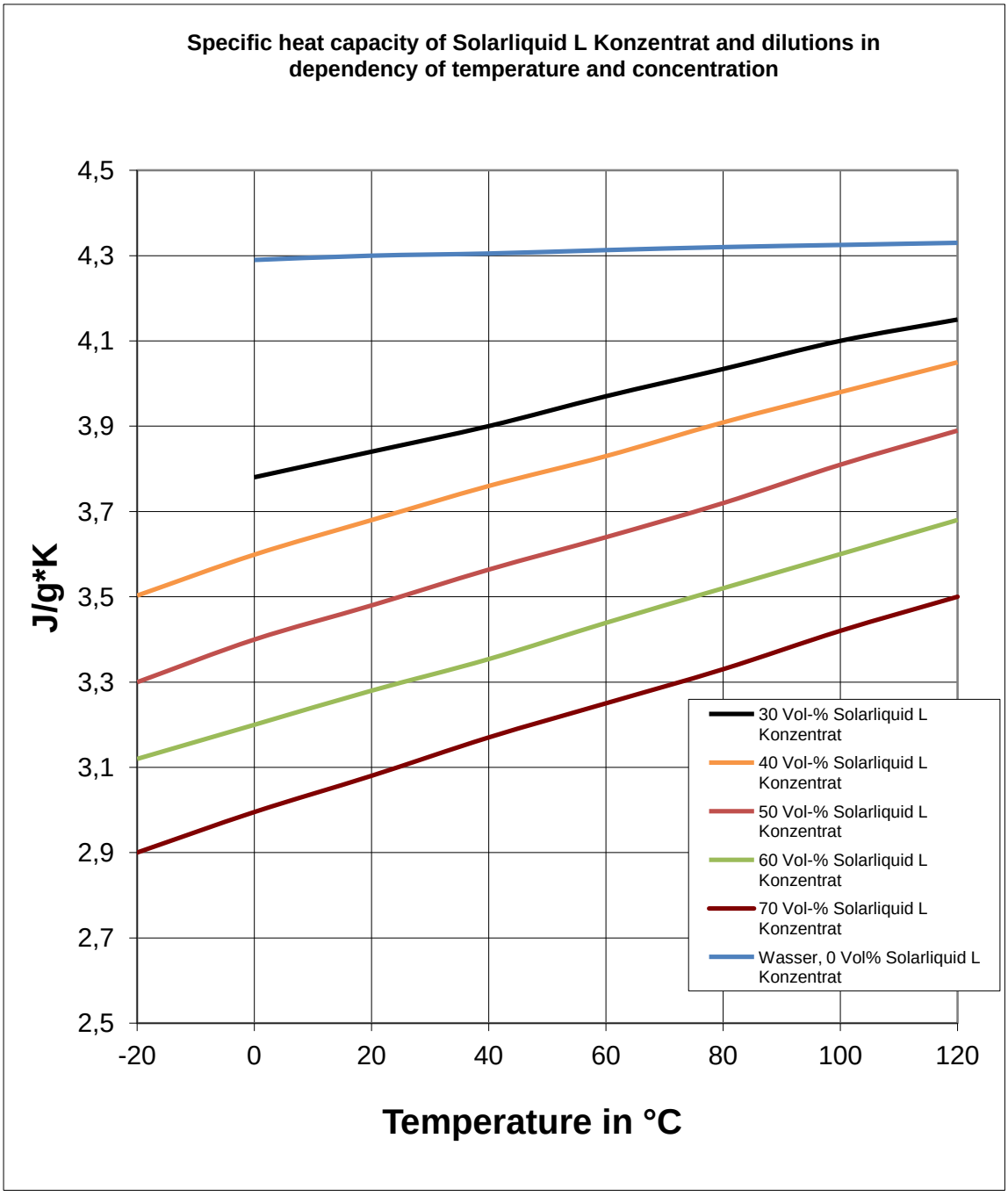
The corrosion properties of our solar fluid are checked by the pH-value. The pH should be >7,5. The pH can be checked by pH-paper. At a lower value, the solar fluid should be replaced.

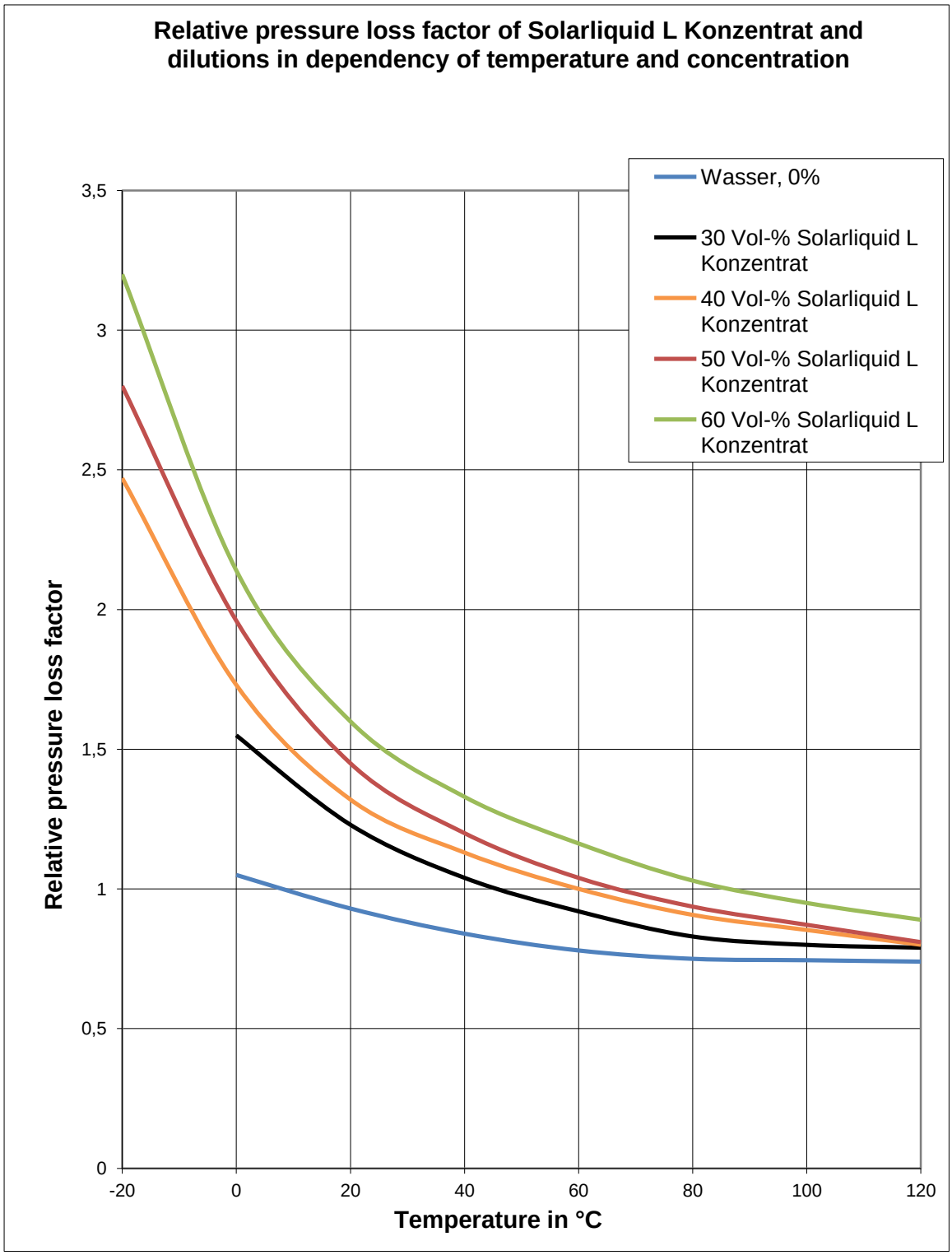
Solarliquid L Konzentrat and Solarliquid L gebrauchsfertig are not hazardous according to Regulation EG 1272/2008 (see safety data sheet).

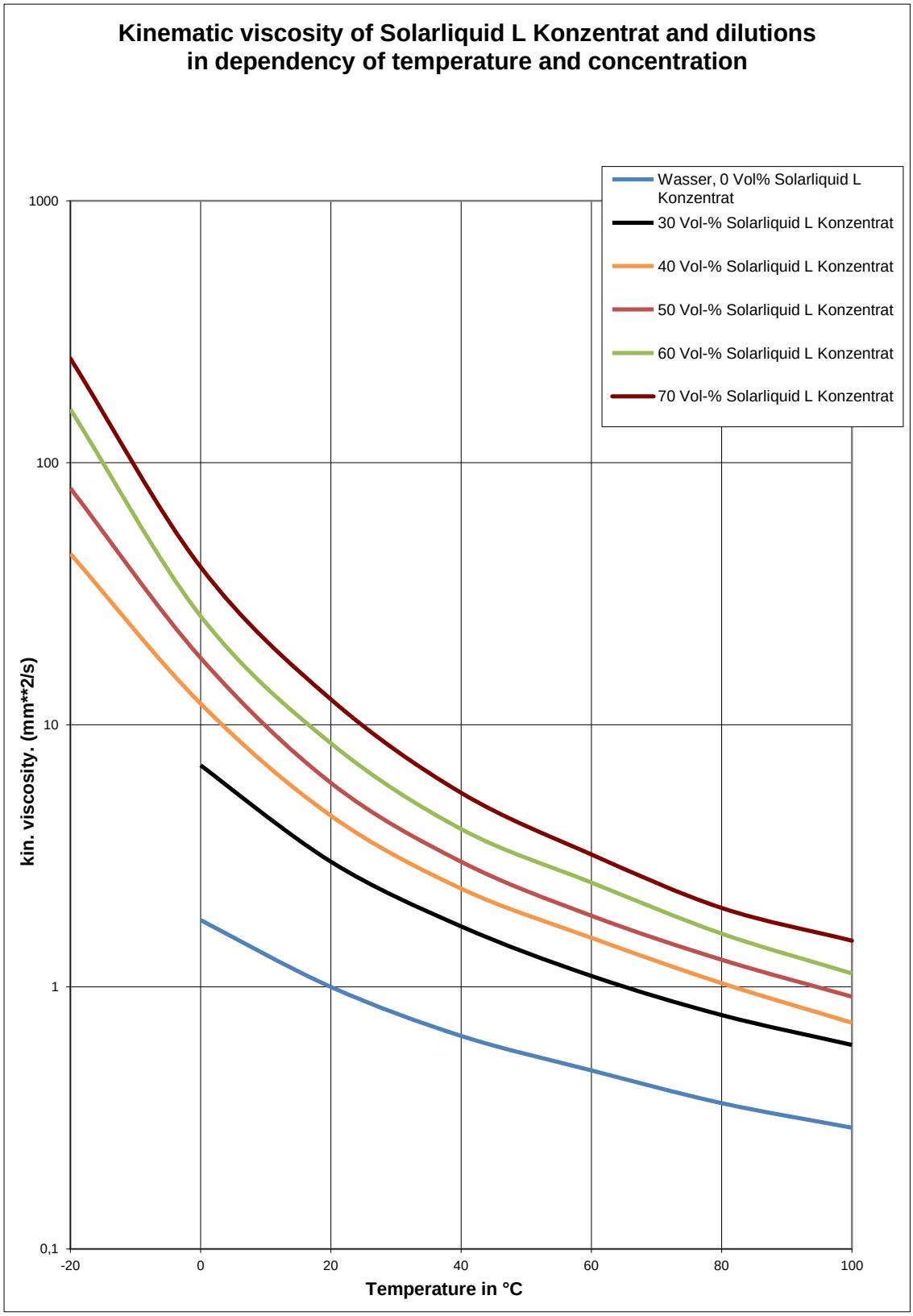
The product information contained in the safety data sheet and application-related information are based on our technical experience. The specifications/ figures are not firm commitments of certain properties. Produkt application for any particular purpose requires prior examination.

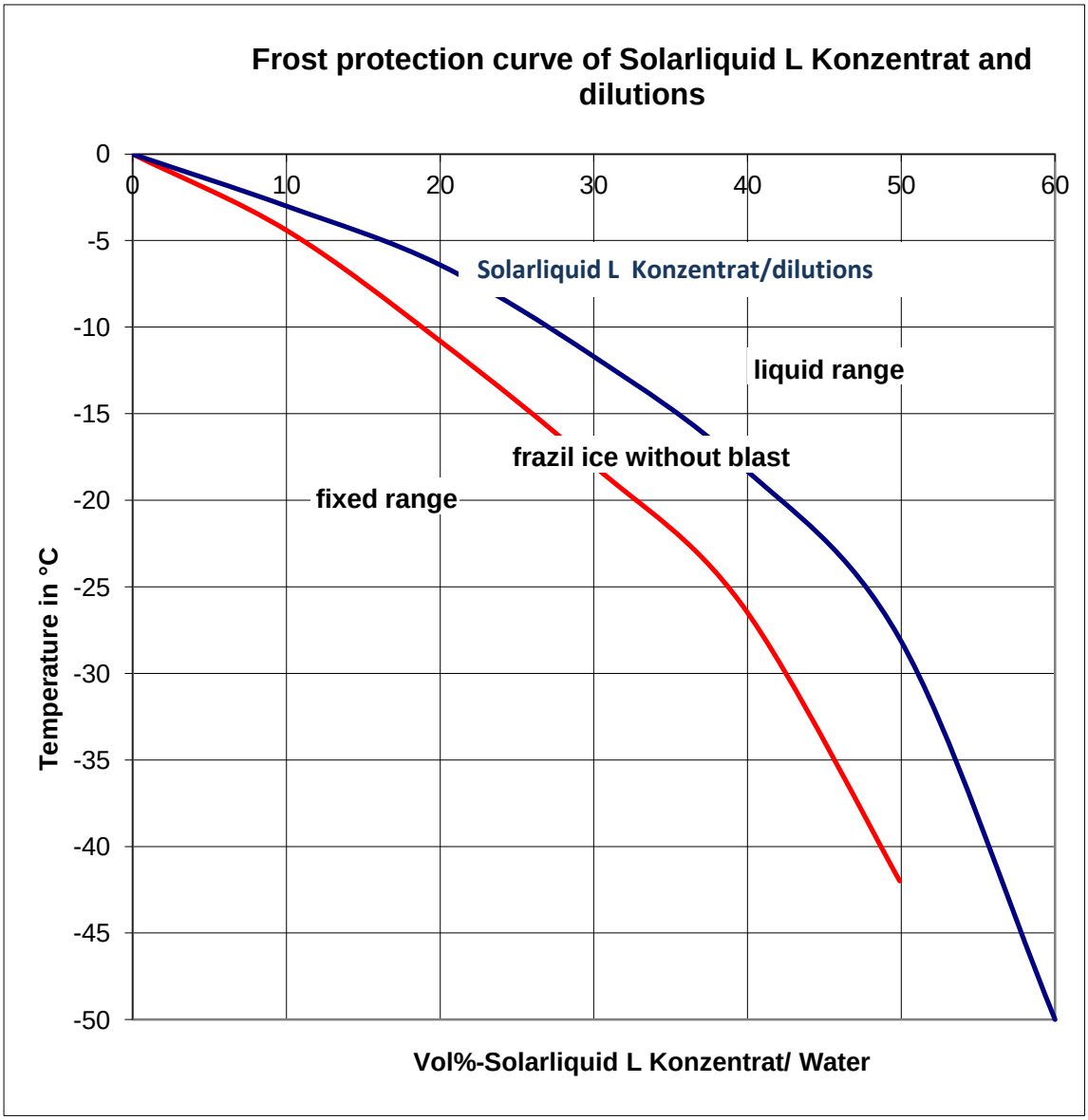
This product information does not release the customer from the obligation to incoming inspection in accordance with HGB 377/378.


Specific weight of Solarliquid L Konzentrat and dilutions in dependency of temperature and concentration
1,1
1,05
1
0,95
0,9
g/cm**3
-20
0
20
40
60
80
100
120
Temperature in °C
Wasser, 0 Vol% Solarliquid L Konzentrat
30 Vol-% Solarliquid L Konzentrat
40 Vol-% Solarliquid L Konzentrat
50 Vol-% Solarliquid L Konzentrat
60 Vol-% Solarliquid L Konzentrat


Specific heat capacity of Solarliquid L Konzentrat and dilutions in dependency of temperature and concentration
J/g*K
4,5
4,3
4,1
3,9
3,7
3,5
3,3
3,1
2,9
2,7
2,5
-20
0
20
40
60
80
100
120
Temperature in °C
30 Vol-% Solarliquid L Konzentrat
40 Vol-% Solarliquid L Konzentrat
50 Vol-% Solarliquid L Konzentrat
60 Vol-% Solarliquid L Konzentrat
70 Vol-% Solarliquid L Konzentrat
Wasser, 0 Vol% Solarliquid L Konzentrat


Relative pressure loss factor of Solarliquid L Konzentrat and dilutions in dependency of temperature and concentration
Wasser, 0%
30 Vol-% Solarliquid L Konzentrat
40 Vol-% Solarliquid L Konzentrat
50 Vol-% Solarliquid L Konzentrat
60 Vol-% Solarliquid L Konzentrat
Relative pressure loss factor
3,5
3
2,5
2
1,5
1
0,5
0
-20
0
20
40
60
80
100
120
Temperature in °C


Kinematic viscosity of Solarliquid L Konzentrat and dilutions
in dependency of temperature and concentration
Wasser, 0 Vol% Solarliquid L Konzentrat
30 Vol-% Solarliquid L Konzentrat
40 Vol-% Solarliquid L Konzentrat
50 Vol-% Solarliquid L Konzentrat
60 Vol-% Solarliquid L Konzentrat
70 Vol-% Solarliquid L Konzentrat
kin. viscosity. (mm**2/s)
1000
100
10
1
0,1
-20
0
20
40
60
80
100
Temperature in °C


Frost protection curve of Solarliquid L Konzentrat and dilutions
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
0
10
20
30
40
50
60
Temperature in °C
Solarliquid L Konzentrat/dilutions
liquid range
frazil ice without blast
fixed range
Vol%-Solarliquid L Konzentrat/ Water