Eutectic brines

Product description:

The eutectic cooling brines described below are used for cold storage in defined temperature ranges from -3°C to -64°C.

Product properties:

The eutectic brines are designed to ensure homogeneous solidification within the specified temperature range. This requires that the required subcooling is achieved through refrigeration.

The eutectic brines must be used in their original state (i.e., undiluted). Even slight dilution, e.g., from flushing, will disrupt the eutectic.

The eutectic brines can also be used as liquid coolants. The evaporator temperature must then be raised accordingly. Under no circumstances should the brine be heated to subcooling temperature, as this will cause it to freeze. The cooling system must be cleaned completely before filling.

When filling closed systems for cold storage (e.g., eutectic plates), an expansion space must be provided (see table). When designing eutectic systems, care must be taken to avoid gaps. Due to the limited convection in crevices, inhibitors may not be able to reach there to build up the protective film.

Physical characteristics:

See thermodynamic data.

Packaging:	**Filling volume**
Drum	Approx. 200 liters
IBC	Approx. 1000 liters

The filling weight varies due to the different densities of the various products.

Safety information:

When handling eutectic brines, the usual protective measures for handling chemicals must be observed.
For further information and regulations, please refer to the relevant EC safety data sheets according to 91/155/EEC.

Ecology and Toxicology:

Please refer to the respective safety data sheets for this information.

Shipping, Storage, and Disposal:

Eutectic brines are shipped in the containers specified above. All containers are reusable. Please empty completely before returning.
Eutectic brines are stable. Store in a dry place in the original container. Avoid direct sunlight. Observe applicable regulations for disposal.

Calculation software:

To calculate thermodynamic values, we provide an online material data calculator on our website www.prokuehlsole.de.
There you can download all product brochures, data sheets, safety data sheets, general and product-specific documents and documentation, as well as ready-made tender specifications.

Service and Monitoring:

Please send us a sample of approximately 500 ml for free testing 4-6 weeks after initial filling and then 1-2 times a year. You will receive an analysis report with the results and the resulting assessment shortly. This also forms the basis of our warranty. We will send you a sample bottle if required.

Other products from pro KÜHLSOLE GmbH:

In technical cooling and heating systems, we recommend the use of ®GLYKOSOL N as an ethylene glycol-based heat transfer fluid. For combined cooling and heating systems, we recommend ®PEKASOL L as a propylene glycol-based heat transfer fluid for applications in food processing plants. As a coolant for food processing plants and technical cooling systems, we recommend ®PEKASOL 2000, based on organic salts. For solar systems and pure heating systems, we recommend ®PEKASOLar, based on propylene glycol and containing thermostable corrosion inhibitors. Further products can be found at www.prokuehlsole.com .

Technical advice:

If you would like individual advice, we are happy to assist you in our sales office.
Our trading partners are also happy to assist you. We will be happy to provide you with the contact person responsible for your needs.

The information in this data sheet reflects our current state of knowledge and provides information about product properties and the resulting application possibilities. It does not guarantee the properties for specific applications. Legally binding assurances for specific purposes cannot be derived from this data. Through our quality assurance based on DIN ISO 9001, we guarantee impeccable quality. Any applicable intellectual property rights and existing legal regulations must be observed.

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This edition replaces all previously published MB Eutectic Sols data sheets.

Thermodynamic data:

Product	Density	pH-value	Freezing Point	required-Supercooling	dew point	heat of fusion	Spezific Heat	Heat Conductivity W/m K		Dynamic viscosity mPa s		Expansion
	g/cm³	-	°C	°C	°C	kJ/kg	kJ/kg K	20°C	Freezing Point	20°C		Vol.%
*PKS -3°C	1,062	12,5	-2,6	-2,8	-2,6	314	3,839	0,604	0,568	1,7	3	8
*PKS -6°C	1,115	8,3-8,7	-5,7	-6,2	-5,5	277	3,834	0,555	0,516	1,6	6	7
*PKS -10°C	1,134	12,5-13	-10,4	-11,4	-10,4	303	3,328	0,559	0,514	1,4	15	10
*PKS -12°C	1,092	8-8,5	-11,7	-12,0	-11,7	301	3,554	0,570	0,520	1,9	15	5
PKS -15°C	1,055	4,5-5	-15,4	-15,4	-15,2	303	3,872	0,533	0,481	1,1	15	5
PKS -17°C-AC	1,221	5,5-6	-17,1	-17,9	-17,1	306	3,512	0,534	0,480	1,4	19	5
*PKS -18°C	1,285	7,5-8	-18,3	-24,2	-18,3	255	3,859	0,561	0,502	2,3	10	7
*PKS -19°C	1,332	12,5-13	-19,0	-19,5	-19,0	282	3,287	0,577	0,518	3,0	38	6
PKS -20°C	1,251	5-5,3	-20,2	-20,9	-19,9	263	3,132	0,510	0,455	9,0	50	6
*PKS -21°C	1,165	12,5	-21,3	-21,8	-21,2	234	3,340	0,576	0,512	1,7	14	6
*PKS -26°C	1,249	12,5-13	-26,0	-26,0	-24,8	260	3,671	0,584	0,511	2,9	36	6
*PKS -27°C	1,181	12,5-13	-27,0	-27,7	-27,0	218	3,592	0,578	0,504	1,7	14	6
*PKS -29°C	1,201	>13,5	-29,4	-33,5	-28,9	222	3,692	0,637	0,552	4,6	40	3
PKS -33°C-AC	1,288	5,4-5,7	-33,5	-34,2	-32,8	243	2,947	0,562	0,480	2,7	60	7
*PKS -35°C	1,184	5,4-5,8	-35,3	-36,8	-35,1	243	3,047	0,542	0,462	3,0	50	4
*PKS -36°C	1,424	13	-36,5	-39,4	-34,1	213	3,152	0,538	0,455	5,3	64	5
*PKS -38°C	1,425	13	-37,8	-39,6	-37,5	213	3,152	0,538	0,455	5,3	64	5
*PKS -51°C	1,302	8,5-9,5	-51,4	-61,3	-51,4	218	3,282	0,559	0,451	3,5	135	7
PKS -64°C	1,314	>13,5	-64,3	-73,0	-64,3	180	4,010	0,582	0,450	2,5	high.	5