



Product Information

05.11.2010

MARLOTHERM[®] XD

Product description

MARLOTHERM XD synthetic organic heat transfer fluid (HTF) is designed for relatively low-temperature use in the liquid phase in closed unpressurized heat transfer systems with forced circulation. The recommended upper temperature limit is 200 °C.

MARLOTHERM XD meets the FDA Regulation CFR 21 Part 178.3530 and 178.3650.

In heat exchangers with a slightly increased heat exchange surface, MARLOTHERM XD will provide adequate heat transfer down to -50 °C. The product is most suitable for indirect cooling in refrigeration plants and in processes in which, for example, aqueous systems are excluded because of possible material contamination or safety considerations.

At operating temperatures above 70 °C, MARLOTHERM XD systems are best operated with an inert gas back-pressure of about 50-200 mbar. Nitrogen has proved itself suitable as the inert gas.

MARLOTHERM XD is thermally stable over the recommended usage range and provides good performance. At operating temperatures below 0°C the heat transfer or refrigeration system should be protected from the effects of moisture.

The maintenance program should include fluid use life testing with representative samples taken from the main stream of the heat transfer circuit.

MARLOTHERM XD can be readily circulated by single-stage centrifugal pumps at temperatures down to - 80 °C. Canned motor pumps and centrifugal pumps with permanent magnet drive can likewise be incorporated in the heat transfer or refrigeration system. The power consumption of the circulation pumps of the system is lower with MARLOTHERM XD than with other heat transfer and refrigeration media, used in this application range.

At operating temperatures up to 70 °C, inert gas blanketing such as nitrogen, is usually unnecessary. Safety considerations, however, may require the use of a protective inert gas blanket in the expansion vessel.

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Sitz der Gesellschaft: Hamburg Registergericht: Amtsgericht Hamburg HRB 78475



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Product data (specification)

Property	Value	Unit	Test method
Appearance at 20°C	liquid, clear	-	visual
Acid number	max. 0.015	mg KOH/g	DIN EN ISO 2114
Density at 20°C	0.75 - 0.77	g/ml	ASTM D 941
Viscosity at 20°C	1.3 - 1.9	mm ² /s	DIN 51562

General product description

Property	Value	Unit	Test method
Boiling range at 1013 mbar	190 - 200	°C	ASTM D 1078
Pour point	< - 60	°C	DIN ISO 3016
Flash point	about 73	°C	DIN 51755
Ignition temperature	about 220	°C	DIN 51794
Steam pressure 20 °C	ca. 0.5	hPa	-

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Phys. data of MARLOTHERM XD

Temperature °C	Density kg/m ³	Specific heat kJ/kg K	Thermal conductivity W/m K	Kinematic viscosity mm ² /s	Vapour pressure hPa
- 80	835	1,80	0,145	290,5	-
- 60	821	1,87	0,141	24,5	-
- 40	807	1,94	0,137	8,7	-
- 20	793	2,00	0,133	4,0	-
0	779	2,07	0,128	2,4	-
20	764	2,14	0,123	1,6	-
40	750	2,22	0,118	1,3	1,6
60	735	2,30	0,113	0,93	5,4
80	720	2,38	0,109	0,75	15
100	705	2,47	0,104	0,61	38
120	690	2,57	0,099	0,50	85
140	675	2,67	0,094	0,42	174
160	659	2,77	0,089	0,36	330
180	644	2,88	0,085	0,31	585
200	628	2,99	0,080	0,17	984
220	613	3,10	0,075	0,15	1530
240	598	3,21	0,070	0,13	2540

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Compatibility with materials of construction

MARLOTHERM XD HTF does not corrode metallic materials definitely used in the construction of heat transfer systems.

It is compatible with bonded asbestos substitute fiber gaskets and gaskets based on other materials customary in heat transfer systems e.g. fluoroelastomers or PTFE. The gasket manufacturers recommendations regarding heat resistance and mechanical strength of the sealing material should be observed. Gaskets should ensure good sealing even during temporary operation of the system at its stress limits.

For frequent high-to-low temperature cyclings in the heat transfer system gaskets of pure graphite, preferably with metal reinforcements, should be used.

Toxicological properties and safety aspects

MARLOTHERM XD is determined for use in closed plant-constructions. Any leakage of the heat transfer medium should be prevented by suitable measures in design and construction or limited to a minimum level. For information on toxicity and safety, consult the latest Material Safety Data Sheet (MSDS).

For system design parameters no TVL has been established for MARLOTHERM XD.

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Shipping and storage

MARLOTHERM XD has a practically unlimited shelf life in closed steel containers. Special protective measures are not necessary for the storage of the heat transfer medium. In handling MARLOTHERM XD, care should be taken to ensure that the product cannot enter the soil or drainage systems. The product is virtually insoluble in water. Used MARLOTHERM XD charges should be recycled for material or energy recovery in accordance with local authority regulations.

With regards to the classification of MARLOTHERM XD under the regulation governing the transport of dangerous goods, reference should be made to the EU Safety Data Sheet.

In general the waste code number for MARLOTHERM XD will be determined by its application according to the EWC. In those cases in which it has not been used as heat transfer fluid follow your local regulations.

Customer service

MARLOTHERM XD is just one of the comprehensive range of high performance heat transfer fluids offered by Sasol for the temperature range from -90 to 360 °C. Detailed information is available on request. Sasol has more than 50 years experience in the field of heat transfer technology. This know-how is available to you, should you have any questions or problems. Whether you have questions about the choice of heat transfer medium for a certain application, about system design, troubleshooting, safety issues or specification problems, our experts are here to help you. Just give us a call! (Phone: +49-2365 49 5371; Fax: +49-2365 49 9180)

An analytical routine check of the heat transfer medium should be part of the maintenance regulations. This check should be carried out at least once a year and is offered by Sasol to all users of MARLOTHERM. The system parameters which are measured will allow our experts an accurate assessment of the condition of the material. This way, prolonged and trouble-free operation of the plant can be ensured. Faults in the plant are quickly detected and can be avoided in due time before extensive damage and costs occur.

This information is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party patent rights. In particular, no guarantee of properties in the legal sense is implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Reference to trade names used by other companies is neither a recommendation, nor is it intended to suggest that similar products could not be used. All our business transactions shall exclusively be governed by our General Sales Conditions.

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