



globaltherm®

N

SYNTHETIC HEAT TRANSFER FLUID
For use in a variety of Industrial Process Applications

PRODUCT INFORMATION

Globaltherm® N is a synthetic organic heat transfer fluid alternative to a mineral oil and delivers longer-lasting service.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name
Globaltherm® N
Heat transfer fluid

Company Information
Globaltherm, Cold Meece
Estate, Cold Meece, Stone,
Stafford, ST15 0SP, UK

Emergency telephone
+44 (0) 1785 760555

Web
www.globaltherm.org

2. PRODUCT DESCRIPTION

Globaltherm® N Heat transfer fluid is a synthetic organic heat transfer fluid for use in the liquid phase in closed, non-pressurised, forced-circulation heat transfer

systems and can be used instead of mineral oils. The maximum bulk outlet temperature has been set at 300°C. The ideal working range is at operating temperatures between 150°C and 300°C.

Globaltherm® N Heat transfer fluid circuits can be operated optimally with a low inert gas back pressure of approximately 50-100 mbar in the expansion vessel, even at the top of the above range. Nitrogen has proven to be a successful inert gas. Globaltherm® N Heat transfer fluid has proven to be extremely stable to thermal influences over the entire temperature range. At high

operating temperatures, thermal decomposition leads to the formation of low and high boiling secondary products, however in amounts which can be tolerated. The low-boiler fractions can easily be removed via the expansion vessel, either during operation of the plant or during maintenance shutdowns. To ensure safe operating conditions in the plant it is necessary to avoid high concentration of low-boilers. The remaining degradation products will be dissolved in the heat transfer fluid. When the proportion of high boilers approaches 15% by mass, the charge should be replaced.



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Globaltherm® N Heat transfer fluid, when used as recommended, does not form any highly viscous or solid deposits. The formation of a coating on the heat exchanger surfaces or clogging of the heat transfer circuit has never been observed.

As an organic heat transfer fluid Globaltherm® N Heat transfer fluid is relatively stable to air. The product is particularly suitable for use in heat transfer circuits for temperature control of processing machines, calenders etc., in which contact of the heat transfer fluid with air cannot be completely prevented due to constructional conditions. The viscosity of Globaltherm® N Heat transfer fluid allows the material to be circulated using standard centrifugal pumps at temperatures as low as -10°C without problems occurring. Globaltherm® N Heat transfer fluid can be transferred into the plant (during re-filling or during start-up) without difficulty, even under unfavorable climatic conditions. Construction and operation of the heat transfer plant should comply with the recommendations according to DIN 4754.

The condition of the heat transfer charge should be regularly checked by means of specific product quality controls.

Used fluid may be disposed of through several environmentally acceptable methods, such as used oil recycling or heavy fuels burning. Talk to us about our all-inclusive used oil reprocessing services.

NOTE: When draining hot fluid after flushing, normal safety precautions should be taken to prevent burns and the risk of fire.

3. APPLICATIONS

Globaltherm® N Heat transfer fluid is intended for use as heat transfer medium in a closed plant.

4. SERVICE CONSIDERATIONS

Globaltherm® N Heat transfer fluid is just one of the comprehensive range of high performance heat transfer fluids offered by Globaltherm® for the temperature range from -90 to 600°C. Global Heat Transfer has more than 25 years' experience in the field of heat transfer technology. Our knowledge is available to you, should you have any questions or problems. Whether you have questions about the choice of Globaltherm® Heat transfer fluid for a certain application, about system design, troubleshooting, safety issues or specification problems, our experts are here to help you. Call +44 (0) 1785 760555 to speak with a member of the technical team.

An analytical routine check of the heat transfer medium, while it is hot and circulating, should be part of the routine maintenance plan. This check should be carried out at least once a year, preferably three to four times a year. Testing can be carried out by Global Heat Transfer - via the Thermocare® lifecycle management programme - to all users of Globaltherm® Heat transfer fluids. The thermal fluid parameters which are measured will allow our experts an accurate assessment of the condition of the fluid. This way, Thermocare® testing and analysis programmes ensure prolonged and trouble-free operation of the fluid. Changes to the condition of the fluid are quickly detected and managed with Thermocare® and can be avoided in time before more extensive damage (to both system and fluid) and further costs are incurred.

Phone: +44 (0) 1785 760555; fax: +44 (0) 1785 760444 to ask about Thermocare® preventative maintenance programmes and heat transfer fluid testing and analysis.

5. COMPATIBILITY

Globaltherm® N Heat transfer fluid is non-corrosive towards metals conventionally used in plant construction. The fluid is compatible with gaskets of the quality grade It-0 or gaskets made of fluorinated elastomers which are frequently used in heat transfer plants.

The thermal stability and mechanical strength of the gaskets provided by the gasket manufacturers should always be considered. When the plant is running under extreme conditions, for example at constantly high temperatures or under frequent changes in temperature, then a completely sealed system is of great importance. In this case, we recommend gaskets made of pure graphite, preferably with a metal inlay.

6. HEALTH AND SAFETY

The use and handling of Globaltherm® N Heat transfer fluid have caused no adverse effects which can be attributed to the heat transfer medium. Nevertheless, the usual guidelines and re-recommendations concerning organic chemicals or high-boiling solvents should be observed.

Globaltherm® N Heat transfer fluid is intended for use in closed systems, therefore the leakage of heat transfer fluid from the plant must be prevented or minimised for safety and environmental reasons by suitable design measures.

Details are to be found in the latest Safety Data Sheet for Globaltherm® N Heat transfer fluid. Please contact a member of the technical team on +44 (0) 1785 760555 for more information.

7. PHYSICAL AND CHEMICAL PROPERTIES

Parameter	Unit	Code (ASTM/ISO)	Result
Appearance at 20 °C	N/A	Visual	Liquid, clear
Chlorine	ppm	DIN 51408	<10
Acid number	mg KOH/g	DIN EN ISO 2114	≤0.02
Density at 20°C	g/ml	DIN 51757	0.855 - 0.888
Viscosity at 20°C	mm ² /s	DIN 51562	28 - 60
General product description	Unit	Code (ASTM/ISO/DIN)	Result
Boiling range at 1013 mbar	°C	ASTM D 1078	about 330 - 400
Pour point	°C	DIN ISO 3016	about -60
Flash point	°C	EN 22719	about 180
Ignition temperature	°C	DIN 51794	about 330
Permissible heater outlet temperature	°C	NTR	300
Permissible heater film temperature	°C	NTR	340
Pumpability limit	°C	NTR	NTR

Note: The information given in the typical data does not constitute a specification but is an indication based on current production and can be affected by allowable production tolerances. The right to make modifications is reserved. This edition supersedes all previous editions and information contained within them. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product. Abbreviations: OC, open cup test; COC, Cleveland open cup test; and, NTR, no test reported.

8. OTHER INFORMATION

Storage and transport

Globaltherm® N Heat transfer fluid has a virtually unlimited storage life when stored in closed metal containers (e.g. aluminium or steel). No special safety precautions are required during storage.

When handling Globaltherm® N Heat transfer fluid, during filling and operation of a heat transfer circuit, care should be taken that the product cannot enter the soil or the sewer system. If necessary the disposal of used GLOBALTHERM® N Heat transfer fluid, should be carried out in a waste incineration plant in compliance with the official regulations.



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In general, the waste code number for Globaltherm® N Heat transfer fluid 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.

Transport class / category	Classification
Hazard class	None
GGVE/GGVS: class no.	None
RID/ADR: class no.	None
GGVSee/IMDG-code:class	None
UN-No.	None
IATA-DGR/IcAO-code:class	None
ADNR: class no. category	None

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