

Gazpromneft HTF

Low-Freezing Heat Transfer Fluids

Gazpromneft HTF – high performance fluids for protecting heating and cooling circuits from frost and corrosion. They are made of ethylene glycol, demineralized water and special organic (carboxylated) corrosion inhibitors to provide reliable and efficient transport of thermal energy within diverse applications. The Organic Acid Technology (OAT) formula gives outstanding protection against frost, corrosion, and overheating. Gazpromneft HTF fluids are free of nitrites, amines, phosphates, silicates and borates. They protect all commonly used metals, including aluminum, and compatible with most plastics and elastomers.

Applications

- Hot water heating systems
- Heat pump systems
- Heat recovery systems
- Refrigeration circuits
- Gravity systems
- Not suitable for the electrolysis boilers, in which the heating occurs by passing an electric current through the coolant
- Gazpromneft HTF 65 must be diluted prior to be used (see dilution chart)

Dilution Chart

Gazpromneft HTF 65/Water, v/v%	Freeze protection
50/50	-22°C
60/40	-29°C
70/30	-37°C
80/20	-46°C
90/10	-55°C
100/0	-65°C

Approvals

- | | |
|-------------|----------|
| • Clivet | • KSB |
| • DAB Pumps | • Lavoro |
| • Grundfos | • WILO |
| • KONORD | • Wirbel |

Typical Characteristics

Properties	Method	Gazpromneft HTF 30	Gazpromneft HTF 65
Color	visually	red	red
Density @20°C, g/cm ³	ASTM D112	1,059-1,063	1,081 - 1,085
pH	ASTM D1287	7,7-8,5	7,7-8,5
Reserve alkalinity, ml HCl	ASTM D1121	2,5-4,0	2,5-4,0
Freezing point, °C	ASTM D1177	-30	-65
Boiling point, °C	ASTM D1120	108	116
Refractive Index @20°C	DIN 51423-2	1,3820	1,4005
Specific heat @20°C, kJ/kg·°C	ASTM E1269	3,1	3,5
Coefficient of expansion, %/°C	ASTM D864	0,05	0,05
@20°C			
@80°C		0,07	0,07
Heat conductivity @20°C, W/m·°C	ASTM C177	0,43	0,38
Viscosity @20°C, mm ² /s	DIN 51562	3,6	7,2
Surface tension, mN/m	DIN EN 14370	53	56

✓ ISO 9001

✓ ISO 14001

✓ ISO/TS 16949

✓ OHSAS 18001

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Available type and size

Product Name	Type	Available Size
Gazpromneft HTF 65	Concentrate (can be diluted prior to be used)	10kg, 20kg, 220kg
Gazpromneft HTF 30	Ready to use product that has been premixed with concentrate and water to obtain -30°C freezing point	10kg, 20kg, 220kg

Miscibility

Gazpromneft HTF is miscible with all commercial heat transfer fluids based on ethylene glycol. However, for optimal control of corrosion and prevention of sludge formation, mixing of different products is not recommended.

Instructions

Gazpromneft HTF 65 is concentrate fluid which can be used for preparation of tailored freezing points mixtures (see dilution chart). It is miscible with water in all proportions. Undiluted heat transfer fluid is worse than water on its thermal physical properties. Diluting of heat transfer fluid for more than 50% will lead to deterioration of its anticorrosive properties, and also to possible deposit of sediment of hardness salts dissolved in water in addition to freezing temperature increase. For heat transfer fluid dilution it is desirable to use water with hardness of 6 points. Usage of water with high salt content can also cause the deposit of sediment.

It should be noted that heat transfer fluid has a lower surface tension coefficient than water so it penetrates into small and cracks easier. In addition, the swelling of rubber in the coolant is less than in water, so in the systems having been working on the water for a long time, the replacement of the water by coolant can lead to leaks related to the fact that the rubber gasket seals take the initial form. We recommend monitoring the conditions of system connections during the first days after filling of the heat transfer fluid and tightening them up or remove gaskets when necessary. The best protection from leaks is good gasket seals and high-quality assembly system.

In the heating system elements that contain zinc, in particular, galvanized elements inside the tube cannot be used.

Heat transfer fluid is designed exclusively for technical use, so do not let it transfer into foods and drinking water in order to avoid poisoning! In case of accidental contact with your hands or your clothing, it is easily washed off with water, leaving no irritation or burns.

Lifetime of heat transfer fluid depends on the mode of its operation. It is not recommended to bring heat transfer fluid to the state of boiling. In case of overheating of heat transfer fluid to temperatures more than +170°C, high-temperature deterioration of ethylene glycol, the formation of "soot" on the heating element, evolution of gaseous products of decomposition and destruction of anti-corrosion additives will occur.

Anticorrosion properties of heat transfer fluid are designed for 10 years of continuous operation, or 20 heating seasons. After this period, the coolant remains low-freezing-point liquid, but may lose or weaken its anticorrosion properties.

Health, Safety & Environment

Information is provided for products in the relevant Safety Data Sheet (SDS). This provides guidance on potential hazards, precautions and first-aid measures, together with environmental effects and disposal of used products. SDS's are available upon request through your sales contract office. This product should not be used for purposes other than its intended use.