Heat Transfer Fluid-PG-ND

Nonfood Compounds
Program Listed (Cat. Code HT1)
(Registration 126441)

Heat Transfer Fluid-PG-ND is heavy duty inhibited propylene glycol based heat transfer fluid for use in secondary cooling and heating applications, for freeze and burst protection of pipes, and for various deicing, defrosting, and dehumidifying applications. **Heat Transfer Fluid-PG-ND** contains 95.5% propylene glycol with the balance a being an inhibitor package to prevent corrosion of metal surfaces. The operating range of **Heat Transfer Fluid-PG-ND** is -50 to +250°F and water solutions will provide freeze protection to below -60°F with burst protection to below -100°F.

Heat Transfer Fluid-PG-ND is clear, colorless liquid.

Heat Transfer Fluid-PG-ND is low in acute oral toxicity making it suitable for use as a heat transfer fluid where there is the possibility of incidental food contact. **Heat Transfer Fluid-PG-ND** is National Sanitary Foundation (NSF) registered as an HT1 category heat transfer fluid (Reg No. 126441). The components are listed the Code of Federal Regulations as Generally Recognized as Safe (GRAS) in CFR21-184.

Heat Transfer Fluid-PG-ND is not to be used in systems containing galvanized or aluminum materials and is not to be used in internal combustion engines or steam boilers.

Preparing solutions of Heat Transfer Fluid-PG-ND:

Water used to dilute Heat Transfer Fluid-PG-ND fluids must meet certain minimum standards for purity. Impurities in dilution water can increase metal corrosion, aggravate pitting of cast iron, and steel, reduce the effectiveness of corrosion inhibitors, increase inhibitor depletion rate, cause formation of scale and other deposits on heat transfer surfaces, and cause clogging of system components.

To assure inhibitor effectiveness, the levels of chlorides and sulfates in water used to dilute Heat Transfer Fluid-PG-ND should be less than 25 ppm each. Total hardness should be less than 100 ppm expressed as calcium carbonate. Distilled or deionized water is recommended. If good quality water is unavailable, solutions of Heat Transfer Fluid-PG-ND diluted with deionized water are available from Wausau Chemical Corporation.

To ensure maximum effectiveness for corrosion protection, the inhibitor package in Heat Transfer Fluid-PG-ND-is designed for a minimum of 25-30 volume percent concentration of propylene glycol in water.

The information contained in this publication is believed to be accurate. The information is offered in good faith but without guarantee. The user assumes all risks in the use of this product. Nothing herein shall be construed as a recommendation for uses that infringe on valid patents or as extending a license under valid patents. The SDS should be read before use of this product.

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TYPICAL FREEZING POINT OF AQUEOUS SOLUTIONS OF Heat Transfer Fluid-PG-ND

Volume % Propylene Glycol	Volume % HTF-PG-ND	Weight % HTF-PG-ND	Static Freeze Point °F	Static Burst Point °F
25.0	26.5	27.0	14.7	0
30.0	31.8	32.5	9.2	-20
35.0	37.0	37.8	2.4	-60
40.0	42.6	43.1	-6.0	<-60
45.0	48.1	47.4	-16.1	<-60
50.0	53.1	53.2	-28.3	<-60
55.0	58.5	58.5	-42.8	<-60
60.0	63.8	63.8	-59.9	<-60
65.0	68.0	68.0	<-60	<-60
70.0	74.5	74.5	<-60	<-60
75.0	79.8	79.8	<-60	<-60
80.0	85.1	85.1	<-60	<-60
85.0	90.4	90.4	<-60	<-60
90.0	95.7	95.7	<-60	<-60
94.0	100.0	100.0	<-60	<-60

Selecting the Proper Concentration of Heat Transfer Fluid-PG-ND

Burst Protection

Burst Protection is sufficient if the system will remain dormant when the temperature is below the freezing point of the solution. In HVAC applications, burst protection is considered an appropriate safeguard in systems where there is adequate space to accommodate the expansion of an ice/slush mixture and the system is inactive during the winter.

Heat Transfer Fluid-PG-ND provides burst protection in the following manner: as the temperature drops below the solution's freezing point, ice crystals begin to form. Because water in the solution freezes first, the remaining glycol solution becomes further concentrated and remains fluid. The combination of ice crystals and liquid results in a flowable slush. Fluid volume increases as this slush forms, with the extra volume flowing into available expansion volume in the system. If the concentration of glycol is sufficient, system damage will not occur.

For burst protection, a 36.6 percent by volume (35% by weight) solution of Heat Transfer Fluid-PG-ND is usually adequate or use pre-blended Heat Transfer Fluid-PG-ND-35%.

Freeze Protection

Freeze protection is required in systems where fluid must be pumped at the lowest anticipated temperature. Freeze protection is essential in cases where no ice crystals can be permitted to form or where there is inadequate expansion volume available to accommodate ice/slush formation.

For freeze protection, the required concentration of Heat Transfer Fluid-PG-ND in the system depends on the operating conditions of the system and the lowest expected ambient temperature. HVAC systems that are subject to prolonged winter shutdown – but that must start-up again while

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the weather is still cold – may require freeze protection. Freeze protection is also appropriate for close-loop systems that must be protected in the event of power or pump failure.

To insure adequate freeze protection, the heat transfer solution should be formulated to maintain a freezing point at least 5°F below the lowest anticipated ambient temperature.

Part Numbers:

5 gal	15 gal	30 gal	55 gal	275 gal	Bulk
2405-5	2405-15	2405-30	2405	2405-275	1264

Safe Storage and Handling Information

Store in original, closed containers. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use personal protective equipment: chemical safety glasses, wear chemical protective clothing, and protective gloves (gauntlet-type, neoprene, nitrile). Maintain adequate ventilation. Wash skin thoroughly after handling.

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