

**PRODUCT CODE:** 62080-1351

**HTF ADDITIVE PACKAGES**

Additives Plus specializes in the development and the production of additive packages used to make virgin, or recycled, propylene and ethylene glycol based heat transfer fluids. The use of Additives Plus Add Paks and heat transfer fluid systems in your products and customer's systems will ensure: consistent product quality, economy, ease of blending corrosion prevention, long-life dependability, minimization of laboratory time and expense. Our chemists have developed a variety of stand-alone Add Paks for: glycol based heat transfer fluids, glycol based safety hydraulic fluids, and alkylate based high-temperature fluids. We can adjust formulations to meet your specific needs for performance-enhancing additives, in both light- and heavy-duty systems.

**INDUSTRY SPECIFICATIONS**

- ASTM D 1384 Corrosion in glassware of steel, cast iron, aluminum, copper, brass and solder.
- ASTM D 1881 Foaming tendency test
- ASTM D 3306 Water pump cavitation erosion/ corrosion test
- ASTM D 4340 Aluminum corrosion at heat transfer surfaces
- ASTM D 4985
- ASTM D 2570 Simulated service metal coupon corrosion test
- ASTM D 6210 Fully formulated pre-charged coolant standard when SCA is added.

**QUALITY CONTROL**

To ensure quality control and assurance, all blending is controlled under stringent standards. Each individual batch of Add Pak is rigorously tested for conformance with product and industry specifications prior to storage, packaging, or shipment. The laboratory analysis is thoroughly conducted by Additives Plus. A Certificate of Analysis for each lot is produced and is available to customers.

**TECHNICAL CONTACT INFORMATION**

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**PRODUCT DESCRIPTION AND APPLICATIONS**

Additives Plus' Heavy-Duty Industrial Heat Transfer Fluid Inhibitor Package (HDIS-3) is designed for use in applications that are more demanding than typical heating/air conditioning systems. Typical uses include coolants for natural gas compressors and turbine systems, natural gas line heaters, and chemical process cooling/heating systems.

This product is based on a combination of phosphate, nitrite, borate, tolytriazole, other proprietary inhibitors, water hardness control agents and antifoam. Typical physical and chemical properties for the Add Pak and for concentrated heat transfer fluid (96% glycol, 4% Add Pak) are given below.

**PRODUCT SPECIFICATIONS**

For HDIS-3 as Add Pak	
Visual	Somewhat cloudy straw-colored liquid
Odor	Slightly bitter, caustic odor
Specific Gravity	1.28-1.35
Boiling Point	225°F
pH	11.0-12.0
For Concentrated Heat Transfer Fluid using HDIS-3 Add Pak	
Reserve Alkalinity	5.0 ml min.
Phosphate (PO <sub>4</sub> )	3950 ppm min.
Nitrite (NO <sub>2</sub> )	1200 ppm min.
Borate (BO <sub>2</sub> )	250 ppm min.
Tolytriazole (C <sub>7</sub> H <sub>6</sub> N <sub>3</sub> )	370 ppm min.

**BLENDING INSTRUCTIONS**

For heavy-duty applications such as use in cooling systems for large stationary engines, use a rate of at least 4% by volume (based on the quantity of glycol being treated) is recommended. HDIS-3 in glycol (either ethylene or propylene) will provide inhibitor levels consistent with those given above as typical, and will provide outstanding coolant performance and equipment protection. For less demanding uses, shorter term applications or situations in which glycol losses may be high (as in certain line heaters and dehydrators) use rates from 2.6% to 4.0% often provide more than adequate protection from glycol oxidation and metal corrosion.