



Paratherm[®] LR[™] Heat Transfer Fluid

Single Fluid Heating and Cooling—Non Aromatic—Non Aqueous

ENGINEERING BULLETIN LR 303

- **Specialty Chemical Batch Process Equipment**
- **Pharmaceutical Production Equipment**
- **Secondary Coolant (“Brine”) Systems**
- **Continuous Process Applications**

The new Paratherm LR[™] low-range heat transfer fluid is rated for service from -40°F to 400°F (-40°C to 204°C). *Non-aromatic*, this non-toxic liquid is safe to use and is easy to dispose. Tough and durable, the Paratherm LR fluid is designed for a broad variety of cooling and heating applications. It is engineered to provide extended performance under rugged operating conditions, yet is easy and safe to handle.

Environmental Safety

The LR fluid is plant-friendly and safe to use. The crystal-clear fluid contains no Superfund Amendment & Reauthorization Act of 1986 (SARA)-reportable substances such as chlorinated hydrocarbons, aromatics, heavy metals, or compounds of sulfur and nitrogen.

Fluid Toxicity

The Paratherm LR fluid is non-toxic. And unlike other heat/cool liquids, it emits no pungent or noxious odors. Be sure to consult the Material Safety Data Sheet (MSDS) before using this product.

Fluid Disposal

Easy to dispose, used or contaminated LR fluid can be safely combined with spent lubricating oils and recycled locally (EPA, citation 57FR21524). Paratherm strongly encourages recy-

Typical Properties*

Base	Hydrocarbon
Appearance	Transparent, Bright Water White
Taste & Odor	Slight Odor
Optimum Use Range	-40°F to 400°F (-40°C to 204°C)
Maximum Recommended Film Temperature	450°F (232°C)
Flash Point (coc) ASTM D-92	>140°F (>60°C)
Fire Point (coc) ASTM D-92	>140°F (>60°C)
Autoignition (AIT) ASTM E659-78	>500°F (>260°C)
Boiling Point (normal boiling point)	398°F (203°C)
Vapor Pressure, psia @ 400°F (204°C)	15.1
Coefficient of Thermal Expansion	0.0004/°F (0.0007/°C)
Average Molecular Weight	160
Density, lb/gal @ 77°F (25°C)	6.51
Pour Point (Crystal Point) ASTM D-97	<-76°F (<-60°C)
Pumpability: Centrifugal @ 2,000 centipoise	<-120°F (<-85°C)
Heat of Vaporization (Calculated)	113 BTU/lb
Total Acid Number (TAN) ASTM D-974	0.01

* These are typical laboratory values, and are not guaranteed for all samples.

cling of used heat transfer fluid to conserve natural resources and to minimize the problem of liquid waste in landfills. Please review local, state and federal regulations when you plan to dispose of any material. Liquids contaminated with chlorinated solvents or other regulated materials may require special handling, and may not be accepted by recyclers.

Technical Assistance

Our technical expertise is available to you in the conceptual stage, during planning and design, and through system construction, start-up and operation. We want to work closely with you in the recommendation of proven thermal fluid systems, and system

components, supplies and procedures. Paratherm engineering also advises on system cleaning, troubleshooting and repair, should these become necessary.



1050 Colwell
Conshohocken PA 19428 USA
Phone: 610-941-4900
Fax: 610-941-9191
800-222-3611
info@paratherm.com
www.paratherm.com

Note: The information and recommendations in this literature are made in good faith and are believed to be correct as of the below date. You, the user or specifier, should independently determine the suitability and fitness of Paratherm heat transfer fluids for use in your specific application. We warrant that the fluids conform to the specifications in Paratherm literature. Because our assistance is furnished without charge, and because we have no control over the fluid's end use or the conditions under which it will be used, we make no other warranties—expressed or implied, including the warranties of merchantability or fitness for a particular use or purpose (recommendations in this bulletin are not intended nor should be construed as approval to infringe on any existing patent). The user's exclusive remedy, and Paratherm's sole liability is limited to refund of the purchase price or replacement of any product proven to be otherwise than as warranted. Paratherm Corporation will not be liable for incidental or consequential damages of any kind.