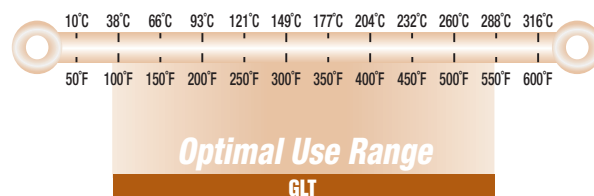


# Paratherm-GLT®

## Heat Transfer Fluid



### Thermally Stable • Low-Temperature Start-Up

ENGINEERING BULLETIN GLT 613

#### Paratherm GLT Heat Transfer Fluid

Paratherm GLT® Heat Transfer Fluid is an alkylated aromatic based heat transfer fluid formulated for closed loop liquid phase heating systems to 550°F.

Applications include:

- Gas processing
- Liquid terminal tank heating
- Asphalt plants
- Plastic production

#### Thermally Stable

Paratherm GLT Heat Transfer Fluid exhibited almost 40% less degradation when exposed to 600°F (316°C) for 500 hours than a widely used competitive fluid. Although very few heaters expose the fluid to the maximum film temperature for extended periods, this level of stability helps insure that your system operates trouble free during operating upsets.

#### Low Temperature Capability

Minimum startup temperature is a realistic measure of a fluid's low temperature capability since 300 cps is the maximum viscosity that a centrifugal pump can handle. Paratherm GLT Heat Transfer Fluid has a lower minimum start-up temperature than any mineral-oil based fluids that cover a similar temperature range.

#### Fluid Storage

Drums should be stored inside to prevent water from getting into the heat transfer fluid. If sealed drums must be left outdoors, they should be stored on their sides. While unopened totes are weatherproof, they should not be stacked if left outdoors. If the fluid is to be stored outside below its minimum pumpable temperature, the containers should be moved indoors to warm up before charging the fluid into the system.

#### Typical Properties\*

Chemical Name	Alkylated Aromatic
Appearance	Clear Yellow
Odor	Mild Solvent
Maximum Recommended Film Temperature	600°F/316°C
Maximum Recommended Operating Temperature	550°F/288°C
Minimum Operating Temperature 20 cPs (20mPa-s)	95°F/35°C
Minimum Start-Up Temperature 300 cPs (300mPa-s)	17°F/-8°C
Viscosity cSt:	
40°C (104°F)	19
100°C (212°F)	3.4
288°C (550°F)	52
Density at 60°F/15.5°C lb/gal (kg/m³)	7.4 (880)
Flash Point Pensky-Martens Closed Cup (D93)	>340°F/171°C
Boiling Point (14.7 psia/101 kPa)	>700°F/371°C
Vapor Pressure @ maximum operating temperature psia (kPa)	3.5 (25)
% Volume expansion over recommended operating temperature per 100 °F (°C)	6.0 (10.8)
Average Molecular Weight	330

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

#### Replacing Existing Fluid

In many cases, changing fluid involves a straightforward drain and fill. There are very few fluids that are so incompatible that 10-15% residue will affect the new Paratherm. If you have any questions, contact us.

#### Charging New Systems

Unless required for product quality reasons, new systems do not need to be cleaned before Paratherm is charged. The amount of chemical coatings, oils, and other manufacturing residues are usually not enough to affect the fluid life. All that is necessary is to install a Y-strainer with a minimum 60 mesh screen up stream of the pump to catch any metal or welding residue. The screen can be removed once the system has been cycled twice through its operating temperature.

#### Fluid Analysis

The fluid in new systems should be tested within 9 to 12 months of start-up. New fluid in existing systems should be tested within the first month of operation to establish a base line for future testing.



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Visit <http://paracalc.paratherm.com> for detailed properties in a choice of temperature increments.

# Paratherm GLT® Heat Transfer Fluid

## Physical Properties

Temperature °F	Temperature °C	Viscosity cPs	Viscosity cSt	Viscosity lb/ft-hr	Density g/cc	Density lb/gal	Density lb/ft³	Thermal Conductivity BTU/hr-ft-°F	Specific Heat BTU/lb-°F	Vapor Pressure mmhg	Vapor Pressure psia
10	-12	433	479	1049	0.90	7.6	56	0.078	0.44		
25	-4	196	218	473	0.90	7.5	56	0.077	0.44		
50	10	83	93	200	0.89	7.4	55	0.076	0.45		
75	24	35	40	85	0.88	7.3	55	0.075	0.47		
100	38	18	21	44	0.87	7.3	54	0.074	0.48		
125	52	11	12	25	0.86	7.2	54	0.072	0.49		
150	66	6.6	7.8	16	0.85	7.1	53	0.071	0.5		
175	79	4.5	5.4	11	0.84	7.0	52	0.070	0.51		
200	93	3.2	3.9	7.8	0.83	6.9	52	0.069	0.52		
225	107	2.5	3.0	6.0	0.82	6.8	51	0.068	0.53		
250	121	2.0	2.4	4.8	0.81	6.8	50	0.067	0.54		
275	135	1.6	2.0	3.9	0.80	6.7	50	0.066	0.55		
300	149	1.3	1.7	3.2	0.79	6.6	49	0.064	0.56		
325	163	1.1	1.4	2.7	0.78	6.5	49	0.063	0.57		
350	177	0.95	1.2	2.3	0.77	6.4	48	0.062	0.58		
375	191	0.82	1.1	2.0	0.76	6.3	47	0.061	0.59		
400	204	0.71	0.95	1.7	0.75	6.3	47	0.060	0.61		
425	218	0.62	0.84	1.5	0.74	6.2	46	0.059	0.62	29	0.6
450	232	0.55	0.76	1.3	0.73	6.1	45	0.058	0.63	43	0.8
475	246	0.49	0.68	1.2	0.72	6.0	45	0.057	0.64	63	1.2
500	260	0.44	0.62	1.1	0.71	5.9	44	0.056	0.65	91	1.8
525	274	0.40	0.57	0.97	0.70	5.8	44	0.054	0.66	129	2.5
550	288	0.36	0.52	0.87	0.69	5.7	43	0.053	0.67	180	3.5
575	302	0.32	0.47	0.77	0.68	5.7	42	0.052	0.68	247	4.8
600	316	0.30	0.45	0.73	0.67	5.6	42	0.051	0.69	334	6.5

Visit <http://paracalc.paratherm.com> for detailed properties in a choice of temperature increments.

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.