FLUID ANALYSIS LABORATORY

Services and Capabilities

Paratherm™
HEAT TRANSFER FLUIDS

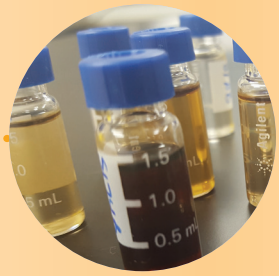
a Lubrizol brand

Fluid Analysis Lab



Paratherm Laboratory Advantages

- Efficient turnaround & verification of fluid analysis results
- Value added customer service
- Technology that reflects our service reputation
- Expertise and service backed by cutting-edge analytical instrumentation


The Paratherm Lab Analyzes 1000's of Samples per Year

- Paratherm's fluid analysis program gives early warning of process problems
- Standardized procedures following ASTM methodology
- Innovative Research and Development
- State-of-the-art facility and automated equipment allows for efficient sample processing rate
- Paratherm's lab is dedicated to the evaluation and analysis of thermal fluid product technologies



Quality Evaluation

Paratherm technical fluid experts analyze critical physio-chemical properties of in-service fluid. Subtle variations in color, clarity and sediment are reported alongside a detailed chemical analysis, all of which is used to determine whether significant degradation of the fluid has occurred and if any action is necessary.

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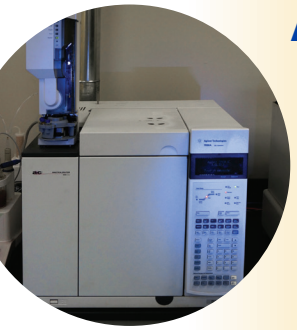
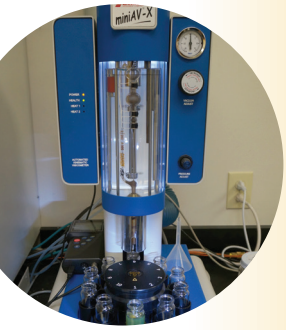
Analytical Capabilities



ASTM D2887 Simulated Distillation by Gas Chromatograph

Analyzes fluid composition for changes caused by overheating or contamination

- Fluid that has been overheated will have a large increase of low or high boilers in a short period of time
- High boilers may also result from fluid that has been contaminated or severely oxidized
- Change of 10% in distillation range, on high or low end, will reduce the heat capacity of the fluid & action should be taken



ASTM D445 Kinematic Viscosity @ 40˚C

Determines whether significant changes to viscosity have occurred that can adversely affect efficient heat transfer

- 50% change in viscosity (+ or -) action on fluid should be taken

ASTM D664 Determines Current Oxidation Level of the Fluid

Shows current oxidation level of the fluid

- Acid Numbers as low as 0.2 can cause significant problems
- Acid Numbers above 0.4 will show accelerated rate of carbon formation
- TAN in excess of 0.4 generally warrants action on fluid

ASTM E1064 Water by Karl Fischer Titration

Analyzes water contamination present in the fluid sample at ppm levels

- Relatively small amounts of moisture (<350 ppm in many fluids) can translate to significant operating issues in thermal fluid systems

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Additional Services Offered

TROUBLESHOOTING – SYSTEMS ASSISTANCE CONSULTING

- In addition to thermal fluid analysis, Paratherm can help you design a fluid PM program and also review general operational issues and system design considerations. Call us at +1 610-941-4900 to arrange a consultation..
- If you're already a customer with Paratherm Heat Transfer Fluid in your process, just call or email us and we'll help you out. Technical support comes with the fluid. You can use the inquiries form on our website, or send us an email at info@paratherm.com, or call us at +1 610-941-4900.

THERMAL FLUID SYSTEM TRAINING

Training sessions are offered at our King of Prussia, PA headquarters. Our Technical Director will discuss technical issues that can compromise the performance of all heat transfer fluid applications — and what you can do about them.

Take a tour of Paratherm's state-of-the-art fluid analysis laboratory & testing equipment. Learn how fluid analysis predicts process problems. You are also invited to bring a fluid sample for live testing and fluid analysis (a $450 value).

Participate in LIVE hot-seat discussions of Fluid Analysis results from the fluid samples brought to class earlier in the day. Talk with other plant personnel on their concerns and what they experience daily. If you are unable to attend our on-site trainings at our headquarters, we are happy to travel to you and set up a lunch & learn and on-site training for your plant personnel. Or, for teams that are located nationally or globally, we can schedule a webinar that is convenient for everyone.

Call Paratherm to discuss scheduling and availability.
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PREMIER HEAT TRANSFER
Fluid Technology.

INDUSTRY LEADING
Solid Service.