



Immersion Engineering™

**In-depth technical support:
keeping heat transfer fluid
systems running and
extending equipment life**

**On-Demand services available
for immediate help in:**

- Fluid Analysis
- Fluid Maintenance
- Training
- Troubleshooting
- Consulting



Immersion Engineering™ goes deep to solve your heat transfer problems.

Immersion Engineering is the evolution of an ongoing commitment to keeping heat transfer fluid systems and equipment running longer and more efficiently.

Paratherm's efforts have long been focused on their clients' applications, systems and operations with expert assistance and quick turnaround being top priorities. Orders can be filled very quickly in urgent situations, because the company



stocks product in six North American locations and five overseas locations in Europe, South America and Asia.

Wherever heat transfer fluids are used, Paratherm is ready to help. No longer is it enough to just sell fluids specified for a processing system. Paratherm immerses itself deeply into heat transfer fluid problems with probing analysis, online research surveys, listening to challenges at trade shows, authoring articles in trade and technical journals or helping a facility manager through a crisis or routine maintenance procedure. Immersion Engineering is fluid, constantly flowing and improving to meet your needs.

Immersion Engineering is also developing new fluids and cleaners in broader temperature ranges

(currently 9 fluids and 2 cleaners covering temperatures from -148°F to +650°F), solving perplexing processing system problems and putting out fires both literally and figuratively. It is taking fluid analyses, which are a critical part of the mission to understanding your heat transfer fluids and systems, and using the results to solve pre-emergent system issues that could result in costly unscheduled downtime. Immersion Engineering is the philosophy of fluid. This philosophy runs deep at Paratherm and is a growing, changing attitude. "Thorough" isn't a strong enough word, but "immersed" says it better.

Immersion Engineering is defined as the art and science by which Paratherm Corporation service specialists and engineers evaluate, understand, and improve heat transfer fluids, and processes. It involves everything from fast response, emergency delivery, system and fluid monitoring, process troubleshooting, providing advice on proper startup and shutdown procedures, knowing where to find leaks, how to stop them and when a valve needs closing.

Immersion Engineering is a never-ending and everflowing consultation. For emergencies, it is available on-demand by entering a credit card for immediate help at www.paratherm.com.

Heat Transfer Fluids by Market

Paratherm Products	Paratherm NF [®] Transfer Fluid	Paratherm HE [®] Transfer Fluid	Paratherm OR [®] Transfer Fluid	Paratherm HR [™] Transfer Fluid	Paratherm GLT [™] Transfer Fluid	Paratherm MG [™] Transfer Fluid	Paratherm LR [™] Transfer Fluid	Paratherm CR [®] Transfer Fluid	Paratherm MR [®] Transfer Fluid
Max Rec'd Operating Temp - Fired Heaters	600° F 316° C	575° F 302° C	Not Recommended	675° F 357° C	550° F 288° C	550° F 288° C	450° F 232° C	Not Recommended	450° F 232° C
Max Rec'd Operating Temp - All Others	630° F 332° C	595° F 313° C	550° F 288° C	700° F 371° C	575° F 302° C	580° F 304° C	480° F 249° C	425° F 218° C	480° F 249° C
Min Operating Temp 20 cPs (20 mPa-s)	96° F 36° C	127° F 53° C	75° F 24° C	75° F 24° C	95° F 35° C	36° F 2° C	-57° F -49° C	-140° F -96° C	25° F -4° C
Min Start-up Temp 300cps (300mPa-s)	-5° F -21° C	41° F 5° C	40° F 4° C	13° F -11° C	18° F -8° C	-37° F -38° C	-112° F -80° C	-185° F -121° C	-47° F -44° C
Applications									
Food									
Biodiesel									
Chemical									
Plastic									
Oil & Gas									
Petrochemical									
Pharmaceutical									
Chiral Chemistry									
Fine Chemicals									
Environmental Test Chambers									
Freeze Dryers									
Polysilicon Processing									
Asphalt									
Die Casting									
Edible Oil Refining									
Switch Condensers									
Spray Drying									
Laundry									
Liquid Terminals									
Coating & Laminating									

Fluid Analysis



Fluid analysis provides insight to keep heat transfer fluids running smoothly and should be conducted annually, or more frequently in demanding applications. Paratherm has conducted thousands of fluid analyses, (in many cases for competitor's fluids) to keep systems running properly.

Paratherm's fluid analysis kit

Standard Analysis

Monitors fluid and system health, and is recommended for:

- Larger volume systems
- Operating temperatures >450° F
- Systems that have not mixed brands of fluids
- Includes the most critical tests: distillation range, acid number & viscosity tests
- Price: \$450.00



Immersion Engineer conducting fluid analysis

Quick Analysis

Determines if fluid can continue to be used or should be replaced and is recommended for:

- Smaller volume systems
- Portable temperature control units
- Systems with a mixture of fluids
- Combination of the acid number and viscosity tests
- Price: \$250.00

The results of fluid analyses provide critical information for fluid or component replacement and maintenance scheduling to ensure consistent system performance.

Fluid Preventive Maintenance

Preventive maintenance is a key component of Immersion Engineering and is closely related to system performance. The easiest way to ensure a smooth operating thermal fluid system is establishing a routine maintenance program.

Paratherm's preventive maintenance provides routine feedback on your system, eliminating surprises. Consistent fluid sampling allows for comparing samples over time, providing insight on how the fluid properties have changed and most importantly what corrective actions need to be taken to keep the system running smoothly.

Paratherm's experts guide facility managers through setting up maintenance programs and performing tasks:

- Taking a fluid sample for analysis
- Proper startup and shutdown procedures
- Using and cleaning filtration strainers
- Removing water & preventing oxidation
- Checking for leaks and open valves
- Draining the thermal buffer tank
- Using system cleaners
- Fluid top-offs
- Draining and re-charging the fluid
- Preventing oxidation, sludge and fluid gelling
- Fluid maintenance programs can be scheduled at <http://services.paratherm.com>

How to check your heat transfer fluids...

Fill a clear jar and turn it upside down.



Not yet.



Still okay.



Better check.



It's time.

Troubleshooting

If you are experiencing any of these problems

- Sudden pressure fluctuations
- Repeated expansion tank overflow
- Excessive fluid addition
- Reduced production rates
- Repeated equipment failures
- Hot or cold spots
- High energy costs
- Extensive system downtime
- Frequent blockage of Y strainers

we can help:



When system performance has changed, the mission of Immersion Engineering is to solve your problems quickly. Immersion engineers (technical experts) are standing by ready to guide heat-transfer-fluid users through problems and emergencies. Think of us as a deeply committed, expert extension of your staff. call us.

The service is invaluable in times of crisis and is available from \$250 per inquiry.

Training

Paratherm provides training programs run by National Association of Safety Professionals Certified Safety Training Specialists to promote system safety and ensure proper care of fluids, systems and equipment.

All programs include:

- Staff certification and pocket cards
- Proof for insurance providers
- Analysis of current safety and operations
- Creation of emergency action plans
- Establish preventive maintenance procedures
- Training follow up with department head

Training Programs:

- **Independent Immersion:** a customized course to cover the topics that are most important for your facility.
- **Immersion 101:** an introductory course for heat transfer fluids and systems. Ideal for a facility that has recently installed a new system and wants to give its staff a general understanding of heat transfer fluid safety and operation. *4 hour private on-site course.*



- **Accelerated Immersion:** expands on the information presented in Immersion 101 with a walkthrough of the facility to identify specific issues. *8 hour private on-site course.*

NOTE: All Immersion Training courses are stand-alone: no pre-requisites. Please contact us if you would like a custom program.

Consulting

Paratherm can help you improve system performance, answer questions about the equipment or just review your process. Whether you are designing a new system, expanding or retrofitting an existing one or just taking over an operation, we can help you with our in-depth knowledge of heaters and ancillary equipment plus an extensive background in a variety of processes. We can work on-site or by phone/email/fax. All you need to is to prepare your fluid and system data and go to <http://services.paratherm.com>. Or call us. *From \$250 per half hour.*



4 Portland Road • West Conshohocken PA 19428

800-222-3611

610-941-4900 • Fax: 610-941-9191

info@paratherm.com

www.paratherm.com

