



Paratherm[®] LC[™] System Cleaner Liquid

Cleans Large Systems — *On The Fly* — Safe, Easy Use

ENGINEERING BULLETIN LC 303

- Restores System Performance
- Dissolves Sludge as System Runs
- Minimal Downtime
- Compatible With Any Mineral Oil-Based Fluid

Benefits

The new LC[™] Liquid is specifically formulated to dissolve and suspend sludge deposits that can reduce flow — and thus heat transfer — in larger continuously-operated systems. Compatible with mineral oil based fluids, it operates while the system does, eliminating the downtime involved with flushing fluids or chemical cleaning agents.

Installation of a side-stream filter with 25-micron capability will increase the effectiveness of the cleaner.

Instructions For Use With Filter

1. Start by installing a 100-micron element in the filter.
2. Replace 10% of existing fluid with Paratherm LC Liquid and restart system.
3. Change filter elements when necessary.
4. Change from 100-micron to 50-micron to 25-micron element as particle loading decreases.
5. If expansion tank needs to be cleaned, open warm-up valves and allow cleaner to circulate through it.

Note: You *must* blanket (pad) the expansion tank with nitrogen before you circulate cleaner through it.

Typical Physical Characteristics

Base Stock	Hydrocarbon
Appearance	Brown Liquid
Flash Point	>350°F (177°C)
Vapor Pressure	<1mm Hg@20°C
Max. Temp.	600°F (315°C)

6. Continue circulating until replacement of 25-micron elements is less than once per day
7. Turn off heat and allow system to cool to 180°F to 200°F (80°C to 95°C) with fluid circulating.

CAUTION: HOT FLUID CAN CAUSE SERIOUS BURNS. USE ADEQUATE PROTECTIVE CLOTHING AND FACE PROTECTION.

8. Drain system with pump operating until pump cavitates or low pressure switch shuts it off.
9. Continue draining as quickly as possible. *Any* delay in draining will allow sludge to settle in system where it will be picked up by new fluid.
10. Install a new 10-micron element in the filter.
11. Fill system with Paratherm heat transfer fluid and restart.
12. Send sample to Paratherm for analysis *one* week after startup.

Instructions For Use Without Filter

1. Remove all Y-strainer elements.
2. Replace 10% of existing fluid with Paratherm LC Liquid. Start system.

3. If expansion tank needs to be cleaned, open warm-up valves and allow cleaner to circulate through the tank.

Note: You *must* blanket (pad) the expansion tank with nitrogen before you circulate cleaner through it.

4. Operate system until heat transfer is restored (2 weeks maximum).
5. Turn off heat and allow system to cool to 180°F to 200°F (80°C to 95°C) with fluid circulating.
6. Drain system with pump operating until pump cavitates or low pressure switch shuts it off.
7. Continue draining as quickly as possible. *Any* delay will allow sludge to settle in system where it will be picked up by new fluid.
3. Fill system with Paratherm heat transfer fluid and restart.
9. Send sample to Paratherm for analysis *one* week after startup.



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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.