D. E. Roush - St. Louis

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Change from Therminol FR to Therminol 66 Heat Transfer Fluid

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Pursuant to our telephone conversation of February 23 regarding the possible change from Therminol FR (Aroclor) fluids in the phthalic and tetrathal units at Delaware River to Therminol 66, I have attached the following:

Therminol Heat Transfer Coefficient and Pressure Drop Data Book
Therminol 66 Data Sheet
Therminol FR Disposal Bulletin

We are very much interested in eliminating Therminol FR (Aroclor) leakage from Monsanto's heat transfer systems. In this regard, we would hope to contain and control any leakage from a Therminol FR containing system. If leakage cannot be adequately controlled, then we would strongly recommend a change to a more ecologically accepted fluid such as Therminol 66 or Therminol 55.

In the case of the phthallic and tetrathal heating systems at Delaware River I strongly urge a change to Therminol 66, not only to overcome a potential pollution problem, but to obtain longer term performance from the heat transfer liquid. Therminol 66 has a top use temperature of 650°F, whereas Therminol FR-1 and FR-2 products have a top use temperature of 600°F. This extra 50° can be a real benefit in terms of operating costs for these two heating systems.

I do not feel any change of equipment will be required in the phthalic unit to use Therminol 66 from the Therminol FR-1 product (Aroclor 1242). The still tank, reboiler, and heater treaters will accept Therminol 66 without any modification. I would suggest you eliminate the inert gas sparge on the expansion tank system and replace it with an inert gas pad. The vent line can be terminated in a back pressure relief valve to maintain one or two pounds pressure on the expansion tank system. It will also be necessary to provide a safety relief device for liquid in addition to the back pressure controller on the expansion tank vent.

Clean out of the heat transfer system is recommended prior to filling with Therminol 66. A non-chlorinated solvent-toluene-will be satisfactory as long as the toluene residual is completely removed from the system prior to filling with T-66.

It will also be necessary to install a fire protection device in the heater proper. This can be accomplished by using a steam flood nozzle with a manual control valve located at a safe distance from the heater. I would assume the production unit incorporates fire protection gear that would also be adequate for the Therminol 66 which is a flammable heat transfer fluid. I would suggest, however, that you consult with plant safety to obtain their opinion in this regard.

Because the tetrathal unit has recently been recharged with fresh,Aroclor, I assume a change to T-66 will be considered at a later date.

Feel free to call either Jim Roder or me in St. Louis for information on Therminol fluids.

D. E. Roush

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Attachments (3)