

See C. Paton/J. J. Roder
1210 A. J. Rego
1460 J. G. Frederiksen

October 22, 1971

Mr. Cody Edwards
National Southwire Aluminum Co.
Box M
Haysville, Ky. 40348

Dear Cody:

Thank you very much for your phone call. I have included per our conversation, fifteen sets of Therminol 55 and Therminol 66 literature. I have also included several copies of our suggested expansion tank layout for these products as well as copies of the toxicity statement on both Therminol 55 and Therminol 66.

As pointed out during our meeting on September 21, the Therminol FR series fluids contain polychlorinated biphenyls (PCBs) of various types. The PCB concentration in our environment has increasingly come under the scrutiny of various governmental agencies and scientific laboratories. In some studies, certain PCBs have been found to be a persistent environmental contaminant and, possibly, injurious to certain forms of bird, aquatic and animal life. Accordingly it is very important that PCBs be kept out of the food chain.

All users of PCB-containing products must take extreme care to prevent any entry into the environment through spills, leakage, use, disposal, vaporization or otherwise.

We are particularly concerned over the leakage of this product at your rail siding where it is used to heat pitch cars. We feel that adequate control of leakage at this point cannot be carried out; therefore, we encourage your consideration of a change to a non-PCB containing fluid. Fortunately, your total system contains multiple, independent heating loops and lends itself to a sequential change of heat transfer fluid without a long interruption of your operation.

A change to either Therminol 55 or Therminol 66 would not require major modification to the existing system. Materials of construction presently installed are compatible with these two

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fluids. I see only two areas that would require specific consideration in the use of a non-FR type heat transfer fluid such as Therminol 55 or Therminol 66. These are the need for additional protective equipment to minimize fire risk and protection of the hot fluid from air contact to minimize oxidative decomposition.

Concerning the fire risk question, I see the need for either a CO₂ or steam snuffing system on the heater to provide a means to quench any abnormal fire conditions within the heater proper. A sprinkler system in the user and heater area may also be required. I would suggest you consult with your insurer for the need of fire risk protection equipment. The data provided on Therminol 55 and Therminol 66 gives flash, fire and autoignition temperature points to assist in evaluating the degree of fire risk.

The second area for consideration involves air contact with hot fluid at the expansion tank and at the tankcar heating station. The expansion tanks for this system can be easily fitted with an inert gas blanket thus precluding air contact with hot fluid in the tank. At the rail siding, however, I feel we have a more difficult problem in that the hot fluid lines are disconnected after the car is unloaded and retention of the fluid in the car coil has not always been successful. The admission of hot Therminol 55 or Therminol 66 into an empty pitch car coil certainly involves intimate air contact which can lead to oxidative decomposition of the heat transfer fluid.

This type of decomposition can bring about the formation of carbonaceous type particles in the fluid lines which would detract from performance of the fluid after some period of time. To minimize air contact with hot fluid at the tank car heating station, I would suggest installation of ball valves at the end of the flexible hose, so that fluid in the hose can be not only retained but protected from air contact. In the event fluid is lost from the tank car coil, I would recommend filling the empty coil with cooled fluid to drive the air out prior to introducing the hot fluid for heating the pitch.

Unfortunately, the car heating area has the greatest leakage of FR fluid and is the one that will present the greatest problems on converting to a non-FR fluid.

As an alternate to total changeover, I recommend you evaluate the possibility of converting the pitch car and pitch storage heating loop from FR to Therminol 55 or 66. Conversion of the other three Therminol FR-1 loops can be done at a later date, since these three loops do not have the degree of leakage experienced at the pitch car heating station.

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Both Andy Rego, our Therminol representative in Cincinnati, and me would be happy to work with you to accomplish a satisfactory change from Therminol FR to a non-FR heat transfer fluid. We will schedule another visit with the people concerned with this situation at National Southwire, after you have had time to review the data. In the interim, please feel free to call either Andy or me in the event you have any questions:

Sincerely,

D. E. Roush
Product Specialist
Heat Transfer Fluids

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Enclosures

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