AG Eades/GR Buchanan
2nd Street - Don Roush
H Gilbert
NEW YORK-A Klemm/W Schalk
CLINTON - GR Graham
CHICAGO - DL Hosmer
LOS ANGELES - D Erisken
CLEVELAND - MG Nichols
HOUSTON - Wm. Shaw
RA Garcia - RGARC

April 2, 1965

Mr. Harold Kaufmann
DCA Food Industries, Inc.
45 West 36th Street
New York 18, New York

Dear Hal:

Here is the "ammunition" I promised to send, justifying a synthetic organic fire-resistant heat transfer liquid over a petroleum oil for your doughnut fryers.

First, I know you will find safety and fire resistance a prime requirement for your customers. You will be at a serious disadvantage should your competition use this difference in their sales pitch. I would imagine the dangers of fire and explosion are fairly prevalent in large bakeries, especially considering an atmosphere of finely divided flour. An incident such as described on the attached copy of a page from the Factory Mutuals Record documents what can happen when a heater tube failure allows flammable oil to spew into the firebox.

Second, as I indicated to you during our discussion, THERMINOL-FR is exceptionally resistant to oxidation. There is no need for inert gas blanketing of the system, and the expansion tank can be run hot or cold with no adverse effects on the fluid. This is not so with a hydrocarbon oil. Note the results of an oxidation test and a coking test that were performed by an independent laboratory. In review, samples were heated for six hours at 500°F. purging with oxygen at the rate of 30 liters per hour. THERMINOL FR-2 measured a viscosity increase of only 1%. The hydrocarbon oil went solid. This manifestation is again confirmed by the Panel Coking Test:

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SEVERE OXIDATION TEST (30L./Hr. oxygen
6 Hr. 500°F.)

	Therminol Fr-2	Hydro-Carbon Oil
Oxygen absorbed, (MOLS/426 G. Fluid)	0.01	3.0
Volatility Loss, Wt. %	0	14
Viscosity increase @ 130°F., %	1	Solid
Fluid Insolubles (Sludge), Wt. %	None	-
Neutralization No. Increase (mgKOH/gm Fluid)	0.0	14.7

PANEL COKING TEST (8 Hours)

Mg. deposit (600°F.)	0.0	65.4
Mg. deposit (700°F.)	11.1	476

Third, hydrocarbon oil type fluids are known to crack above 500°F. liberating, as well as other gaseous products, hydrogen which is a flammable hazard in itself and leaks of hydrogen are undetectable until it is too late.

Fourth, petroleum heat transfer oils cannot be reclaimed as can THERMINOL in case inadvertent overheating takes place. Consequently the charge of THERMINOL, in essence, becomes a component of the system with "repair services" available.

And last Hal, Monsanto is fully committed to serving the heat transfer fluid customer in every way possible. Fluid Specialists (chemists and engineers), handling nothing but our Functional Fluids, are stationed in the major industrial areas throughout the country. They can be relied on to provide assistance and service at any time to your customer. Also, a fully staffed and equipped Applications Research Group, here in St. Louis, is available to tackle any special problems concerning the fluid that cannot be handled in the field.

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Again Hal, THERMINOL-FR is the only heat transfer liquid with Underwriters' Laboratory, Inc. listing. Our production is reviewed by U.L. semi-annually to assure that no production variance effects the fire-resistant properties.

I know these points are important to you. When you weigh them against the difference in the initial cost of the fluid, the overall picture has to favor THERMINOL-FR.

Perhaps the strongest evidence I can present at this time is the following list of oil companies, most of them marketing a heat transfer fluid of their own, who have selected THERMINOL-FR because of its obvious superior characteristics:

Gulf Oil Company, Las Vegas, Nevada
Ethyl Corporation, Baton Rouge, Louisiana
Sun Oil Company, Dallas, Texas
Universal Oil Company, Des Plaines, Illinois
Continental Oil Company, Ponca City, Oklahoma
Esso Research & Engineering, Linden, New Jersey
Phillips Petroleum Company, Bartlesville, Oklahoma
Sinclair Refining Company, New York, New York
Brea Canyon Oil Company, Los Angeles, California
Lubrizol Company, Painesville, Ohio
Shell Oil Company, Santa Barbara, California
Standard Oil of California, Los Angeles, California
Standard Oil of Ohio, Cleveland, Ohio
Wilshire Oil Company, Los Angeles, California

Of interest is that we are assigning a knowledgeable and talented young man exclusively on THERMINOL for the New York area. He is Henry Gilbert (who will reside in New York City) and he will be contacting you to introduce himself shortly after he gets settled.

Hal, by all means let me know how else we can help. You may, of course, contact me here in St. Louis any time, or contact Hank Gilbert through our New York office after April 9.

Cordially,

S. Shaw
Market Specialist
Functional Fluids

jf

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