Monsanto

FROM (LOCATION): Richard Davis - G. O.

DATE: January 31, 1969

SUBJECT: THERMINOL BRINE SUBSTITUTE - CANDIDATE NO. 5

REFERENCE:

TO: J. D. Sullivan
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As a result of our meeting January 27, Research will determine if the fire resistance of Candidate No. 5 can be improved significantly while retaining a viscosity of 15 to 20 cs. maximum at 0°F. and a boiling point and thermal stability of about 300°F. minimum.

Candidate	Approximate Composition	Vis. at 0°F.	x pt	Spray Flammability Test Results (est)
5a (present candidate)	50% Aroclor 1232 50% O-DCB	12 cs	-25°F	Intermittant flashing 15 inches from orifice - flame carries 12 feet from orifice.
5b	10% Aroclor 1242 90% TCB	?	?	No ignition
5c	15-20% Aroclor 1232 80-85% TCB	?	?	?
For comparison: Therminol FR-Lo Temp	50% Aroclor 1242 50% TTCB	65 cs	-60°F	No ignition

Research will try to formulate candidates 5b and 5c to 15 to 20 cs. or less at 0°F. and check fire resistance by spray flammability.

I was to determine the cost to us of various blending components. These costs have been determined and are as follows:

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Aroclor 1232	7.0¢/lb. bulk at Anniston would be same price if made at WGK 8.3¢/lb. in drums at Anniston add 2¢/lb. to ship drums to St. Louis
Aroclor 1242	7.0¢/lb. bulk at WGK
TCB	10.0¢/lb. bulk at WGK
TTCB	12.0¢/lb. bulk at WGK
O-DCB:	"99% ODCB" 6.5¢/lb. bulk at WGK made by chlorination of ONCB and may contain traces of ONCB
	"Refined Orthene" 5.9¢/lb. bulk WGK 93% ortho, 7% para
	"Orthene" 2.5¢/lb. bulk WGK crude ODCB 79-85% ortho 15-21% para
2-Ethyl hexyl acetate	

Less than trucklot of drums		34.5¢/lb. delivered
carlot of drums		32.0¢/lb.
	Tank Truck	29.5¢/lb.
	Tankcar	29.0¢/lb. delivered

Foster-Wheeler indicated likely purchase in December 1969 of 10,000 gallons of brine substitute Candidate No. 5 and a few months later purchase of 7,200 gallons. However, latest information from Polaroid indicates they need very low viscosity (5 cs. at 0°F.) and will trade fire resistance to get it. Therefore, they will use Dowtherm E (ODCB) but also want to evaluate our Candidate No. 1 (MCS 836). This allows us more time for the Research work described above.

Both companies liked our Therminol FR Lo-Temp but found it too viscous in the 0°F. to 10°F. temperature range. Both want a degree of fire resistance not necessarily as good as Therminol FR Lo-Temp. This gives us a feeling of the product or products that the market is looking for.

Richard Davis

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