Monsanto

FROM (NAME & LOCATION) A. W. M. Coaker - General Offices - B3NE

DATE October 4, 1971

SUBJECT WORK REQ. 121-71-514
PRIORITY 5
Northern Electric

TO N. W. Touchette
1760

cc R. N. Brell - B3NE
J. A. Cannon - 1760
[redacted]
M. W. Farrar - 1760
R. V. Johnson - B3nD
R. H. Mills - 1760
A. W. Morgan - 1760
Georgia Schilling - B3NE
~~N. W. Touchette 1760~~
1 WR File
1 RF File

C. D. Bias - 1760
J. H. Brydon - 5080
P. R. Graham -
E. L. Kaiser -
J. K. Lilly -
Sten Roy - 5080

OBJECTIVES

1. Commercial - to boost MOCAN's plasticizer sales to Northern Electric.

2. Technical - to develop a formula based on Monsanto's plasticizers which meets the requirements spelled out by NE 75°C-rated insulation suitable for cold areas.

DETAILS

Requirements defined by Marta Farago - a Cable Materials Development Supervisor at NE - are:-

24 weeks IR conforming to CSA C22-275. Tb of -50°C or lower by ASTM D-746 (5/10 failure pt.). Oven aging 7 days at 121°C on 30 mil specimens and 14 days at 121°C on 75 mil specimens. I suggest we omit the latter to save time since Marta has found these tests correlate well on most plasticizer systems.

Marta has found that compounds which pass D-746 at -50°C usually also pass the CSA impact brittleness test at -40°C to run which requires a specimen of actual insulated wire.

The base formula NE is developing for this application is:-

Opalon 640	100
Plasticizer	50 to 60
Dythal	7
#33 Clay	7
DS-207	0.5

Some time ago, Marta reported that it takes 75 phr of DUP to get a Tb of -51°C in the above type of formula at

DSW 587628

STLCOPCB4092964

which level the electrical properties are quite unsatisfactory.

A plasticizer system to meet the above probably should be built around Santicizer 97TM, DUP and Santicizer 97A, with a possible starting point of about 1/3 of each at 55 phr. At 60 phr I expect the adipate could be cut down and the DUP increased.

Please run the D-746 before starting oven aging and electrical testing. When we reach about 4 weeks on the IR test, please give me a progress report as we should then approach NE again if IRs look satisfactory and we have passed the oven aging test.

Bill

A. W. M. Coaker

AWMC/gls

DSW 587629

STLCOPCB4092965