

Monsonato

FROM NAME & LOCATION C.R. COLEMAN, Ruabon.

DATE 28th May, 1969.

cc:

G.V. Adkins, Rome.
 ✓P.G. Benignus, St. Louis.
 B.O. Fjeld, Stockholm.
 P.J.A. Marsh, London.
 D.A. Olson, St. Louis.
 J.M.M. Thomson, London.

SUBJECT ACTION SHEET - ELECTRICAL FLUIDS
 COMPETITOR'S TRANSFORMER ASKARELS.
 CRC/BJO'G.

TO : J.N. HAGGART, Brussels.

I received this document today and note that I have to complete the second action by 1st June. The information that I have about products from Bayer, Kanegafuchi and Prodelec is up-to-date, but that from Caffaro and Russia may be out-of-date since I have not recently had contact with these suppliers.

The table gives details.

Manufacturer	Brand	Composition % w/w)
Bayer	Clophen T64	Hexachlorodiphenyl 60
West Germany		Trichlorobenzene 40
		Scavenger None
Bayer	Clophen T241	Hexachlorodiphenyl 45
		Trichlorobenzene 40
		Tetrachlorobenzene 15
		Scavenger None
Caffaro	Apirolio 1488 T	Hexachlorodiphenyl 60
Italy		Trichlorobenzene 40
		Scavenger None
Kanegafuchi	Kanechlor 1000	Hexachlorodiphenyl 60
Japan		Trichlorobenzene 40
		Scavenger Not known.
Kanegafuchi	Kanechlor 1300	Composition not known (Note 2)
Prodelec	Pyralene 1467	Hexachlorodiphenyl 60
France		Trichlorodiphenyl 40
		Scavenger - TPT 0.125
Prodelec	Pyralene 1470	Hexachlorodiphenyl 45
		Trichlorobenzene 40
		Tetrachlorobenzene 15
		Scavenger - TPT 0.125
U.S.S.R.	Sovtol 10	Pentachlorodiphenyl 90
		Trichlorobenzene 10
		Scavenger - See note 1.
U.S.S.R.	Sovtol 2	Pentachlorodiphenyl 64
		Trichlorobenzene 36
		Scavenger - not known.
U.S.S.R.	Sovtol 1	Pentachlorodiphenyl 75
		Trichlorobenzene 25
		Scavenger - not known.

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Note 1 - Report No.2. Job No.370-503 Date 7.3.68 by G.W. Miller, Anniston Plant. "Scavenger is present in a concentration equal to 0.014 milli-equivalents chloride per 100 grams of blend. The scavenger does not appear to be an epoxide. ... most probably arises from a nitrogenous base type of scavenger".

PYRALENE 1467 = 30% TCIB + 44% ARACHIDIC ACID
 PYRALENE 1495 = AFCEAR 1248 (over) Cont'd...

Note 2 - This is a new low temperature transformer askarel. It has a lower density range 1.330 to 1.370 g/cm³ at 15°C, and a wider distillation range 170 to 360°C at 760 torr. Its pour point is less than -50°C and its kinematic viscosity at 50°C is 1.0 to 2.0 cSt. It is claimed to be non flammable (JISC2321). Its relative permittivity at 50°C, 50 Hz is 5.0 to 5.5 rather high.

You can see that Bayer and Prodelec both produce Pyranol 1470 type askarels with a greater ratio of chlorinated benzene to chlorinated diphenyl giving pour points in the range -45 to -50°C compared with -34 to -37°C for our present blend. A typical transformer mineral oil has a pour point as low as -60°C. Obviously there is no demand in the UK for this type of transformer askarel, but in Europe it may well be different. It would be interesting to find out how much of the Pyranol 1470 type is sold in relation to the 1467 type. We should also see how Kanegafuchi with Kanechlor 1300 have obtained a pour point lower than -50°C.

In the UK we are not able to generate our own experience on the operation of transformers at low temperatures, since instances of long sub-zero spells are so infrequent. It is therefore not possible to correlate experience and case-histories of transformers with the physical properties of various blends. Since we are about to launch Pyroclor 70/30, whose main difference from the present Pyroclor is its increased viscosity at lower temperatures, it would be helpful if we had some case histories of transformers filled with this blend which have successfully withstood frequent energisation at sub-zero temperatures. Such examples would reassure transformer manufacturers who might be worried about the higher viscosity of the new blend more convincingly than theoretical arguments.

CRC

COLIN R. COLEMAN.

P.S. I note you have covered the last paragraph in your first action.

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