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No. IC/FF - 57

(DATE: MO./YR)

TECHNICAL DATA SHEET

MCS-1865 AND MCS-1866

TRANSFORMER FLUIDS

Fluids for use in liquid-filled transformers should have high dielectric strength, wide operating temperature range, good heat transfer properties, chemical stability and be fire resistant.* MCS-1865 and MCS-1866 were developed to provide such characteristics, and are suggested for evaluation as dielectric fluids for transformers.

MCS-1865 and MCS-1866 do not contain polychlorinated biphenyl (PCB). ~~nor silicone fluids.~~ Both MCS-1865 and MCS-1866 are synthetic hydrocarbons combined with trichloro-benzene to give the desired viscosity level. These fluids have a considerable degree of fire resistance, but are not equivalent to askarels in this general characteristic.

Technical data on typical laboratory samples are given below. Additional studies are underway to develop further ~~and the~~ data. ~~will be supplied later.~~ Samples are available for preliminary evaluation.

STANDARD DISCLAIMER CLAUSE (BOXED)
*FIRE RESISTANCE DISCLAIMER (BOXED)
MONSANTO (LOGO)
MIC ADDRESS LINE

DSW 306271

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TYPICAL DATA*

	MCS-1865	MCS-1866
ELECTRICAL PROPERTIES		
Dielectric strength (ASTM D877) 25°C, 0.1 inch gap	>50 KV	42.1 KV
Impulse Strength	>120, <160 KV	-
Power Factor, 100°C, 60 Hz (ASTM D924)	0.11%	0.01%
Dielectric Constant, 100°C, 60 Hz (ASTM D924)	2.56	2.74
Gassing Tendency (ASTM D2298)	9.5 ml/min.	41.2, 31.7 ml/min.
FIRE RELATED PROPERTIES		
Flash Point (ASTM D92)	315°F.(157°C)	310°F (154°C) ~~255°F(124°C)~~
Fire Point (ASTM D92)	None to b.p. (390°F [200°C])	None to b.p. (390°F [200°C])
Auto Ignition Temp., (ASTM D2155)	750°F(399°C)	800°F(427°C)
Oxygen Index	18.3	17.1
PHYSICAL PROPERTIES		
Specific Gravity		
@ -30°C	1.027	1.088
-15°C	1.016	1.076
0°C	1.005	1.065
25°C	0.987	1.045
50°C	0.970	1.026
100°C	0.933	0.988
150°C	0.895	0.948
Coefficient of Exp., ml/ml,°C	0.000750	0.000761
Viscosity, cs.		
@ -40°C	19,620	-
-30°C	5,119	1830
-15°C	1,040	426
0°C	306	140
25°C	69.5	37
50°C	24.4	14.7
100°C	6.44	4.50
150°C	2.88	2.18

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*This data is based upon samples tested in the laboratory and is not guaranteed for all samples.

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	MCS-1865	MCS-1866
Pour Point (ASTM D97)	-50°F(-45°C)	-50°F(-45°C)
Temperature °C at which Vapor Pressure is:		
1 Torr	58	49
10 Torr	104	96
100 Torr	169	161
760 Torr	248	240
Specific Heat, BTU/lb.		
@ 25°F	0.412	0.390
50°F	0.430	0.406
100°F	0.466	0.438
150°F	0.501	0.470
Thermal Conductivity BTU/ft., hr.		
@ 25°F	0.0785	0.0744
50°F	0.0771	0.0729
100°F	0.0744	0.0702
150°F	0.0716	0.0675

MATERIALS COMPATIBILITY

Extensive compatibility testing has not been completed. However, it is expected that those materials which are used with askarel transformer fluids will also be compatible with MCS-1865 and MCS-1866. It is recommended that compatibility tests be conducted between the fluids and samples of the specific material to be used under conditions simulative of actual use. A good procedure for such testing is ASTM 3255, Method for Investigating the Compatibility of Transformer Insulation and Construction Materials in Askarels.

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~~HANDLING PRECAUTIONS~~

Note: ~~(A statement of handling precautions is currently being prepared by the Medical Department and will be added to this bulletin before it is printed).~~

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