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W. D. Lubic

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TECHNICAL DATA SHEET

No. IC/FF-57
(Date: Mo/Yr)

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. These fluids have a considerable degree of fire resistance, but are not equivalent to askarels in this ~~general characteristic~~, particular feature.

MCS-1865 and MCS-1866 do not contain polychlorinated biphenyl (PCB). Both MCS-1865 and MCS-1866 are synthetic hydrocarbons combined with trichloro benzene to give the desired viscosity level.

Standard Disclaimer Clause (boxed)

*Fire Resistance Disclaimer (boxed)

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MIC Address Line

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-3259-0372-6

STLCOPCB4069663

Technical data on typical laboratory samples are given below. Additional studies are underway to develop further data. Samples are available for preliminary evaluation.

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)
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

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

	MCS-1865	MCS-1866
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
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

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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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