

Monsanto (logo)TECHNICAL DATA SHEET

No. 1C/FF - 57

MCS-1865 AND MCS-1866

(DATE: MO./YR)

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 trichlorobenzene 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)

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M/C ADDRESS LINE

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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.

MCS-1865MCS-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.

~~HANDLING PRECAUTIONS~~

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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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