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TECHNICAL DATA SHEET

No. IC/FF-54

(DATE: MO./YR.)

MCS-1238

CAPACITOR FLUID

MCS-1238 is suggested as a capacitor impregnant dielectric fluid to directly replace presently used polychlorinated biphenyl (PCB) fluids. It was designed to provide the outstanding dielectric characteristics of PCB impregnant fluids such as Aroclor® 1016.

MCS-1238 fluid consists of a chlorine-free synthetic aromatic hydrocarbon combined with a high dielectric constant aryl sulfone and additives to give good dielectric properties. Because of its relatively high dielectric constant and other characteristics, it can be used in present capacitor ~~designs as a direct PCB replace-ment.~~ types with minimum dielectric redesign. MCS-1238 fluid is not as fire resistant* as the presently used Aroclor 1016; however, no flammability standards for capacitor impregnant fluids have been adopted and MCS-1238 appears to be somewhat less flammable than equivalent viscosity petroleum oils. Based upon ~~present~~ initial test data, MCS-1238 is acceptable from human and environmental health considerations; it does biodegrade and does not bioaccumulate.

In addition, MCS-1238 fluid compared to Aroclor 1016 has much better low temperature characteristics, can be used in metallized paper/film capacitors, is better in DC capacitors and has better high frequency characteristics.

DSW 306274

Typical data for MCS-1238, determined on various samples of fluid, are given in the following sections. Material is available for evaluation.

footnote ↓

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TYPICAL DATA*

~~TYPICAL DATA*~~

ELECTRICAL PROPERTIES

Dielectric constant at 25°C, 60Hz (ASTM D924)	6.0
Dielectric constant at 100°C, 60Hz (ASTM D924)	5.1
Dissipation factor, 100°C, 60 Hz (ASTM D877)	0.046
Resistivity, 100°C, 10^9 ohm cm (ASTM D1169)	1,000

In MCS-1238 impregnated capacitors
(2 microfarad, 585 VAC, 2 layers .66 mil paper, 0.3% Unox added)

Capacitance at 25°C, f	1.97
Dissipation factor at 25°C, f	0.0037
Capacitance at 90°C, f	1.87
Dissipation factor at 90°C, f	0.0039

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

INSERT ON FIRST PAGE OF DATA SHEET:

- STANDARD DISCLAIMER CLAUSE (BOXED)
- *FIRE RESISTANCE DISCLAIMER (BOXED) from p. 12, Legal Guidelines
- Monsanto logo
- MIC Address Line

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TYPICAL DATA*

PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity, 25/25°C/ (ASTM D1810)		1.018
Viscosity, at 100°F/(37.8°C) (ASTM D445)		9.1 cs.
Viscosity, at 210°F/(98.9°C)		1.98 cs.
Pour Point (ASTM D97)		-60°F/ (-51°C/)
Flash Point (ASTM D92)		303°F/(150°C/)
Fire Point (ASTM D92)		328°F/(165°C/)
Autogenous Ignition Temperature (ASTM D2215)		835°F/ (446°C/)
Hydrolysis (NN after 168 hrs. at 210°F/ with 0.5% H_2O and aluminum and steel present)		0.00
Vapor Pressure	95°C/	1 torr
	150°C/	10 torr
	220°C/	100 torr

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

DSW 306276

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SPECIFICATIONS*

Appearance	Clear liquid
Moisture, ppm	35 maximum
Dielectric constant at 100°C.,60 Hz	5.1 ± 0.1
Dissipation factor at 100°C., 60 Hz	0.05 maximum
Specific gravity, 25/25°C.	0.99 to 1.03

*These specifications are ~~xxxjxxxxxx~~ tentative and subject to ~~change~~ confirmation or change as experience is developed.

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