MCS 1889

MCS 1889 is a synthetic hydrocarbon fluid suggested for evaluation as a capacitor impregnant dielectric fluid. Typical data for MCS 1889 are given below. These data are based upon samples tested in our laboratories and are not guaranteed for all samples. Material is available for evaluation and purchase.

Electrical Properties*,**

Dielectric Constant, 25°C., 60 Hz (ASTM D924)	2.6
Dielectric Constant, 100°C., 60 Hz (ASTM D924)	2.5
Dissipation Factor, 100°C., 60 Hz (ASTM D877)	0.001
Resistivity, 100°C. (ASTM D1169)	3×10^{14} ohm cm
Dielectric Strength, 25°C., 0.1 inch gap (ASTM D877)	> 50 KV

Physical And Chemical Properties *

Specific Gravity, 25/25°C. (ASTM 1810)	0.998
Viscosity, 210°F. (99°C.) (ASTM D445)	1.62 cs
100°F. (38°C.)	4.90 cs
0°F. (-18°C.)	65.0 cs
Pour Point (ASTM D97)	-90°F.(-68°C.)
Flash Point (ASTM D92)	310°F. (154°C.)
Fire Point (ASTM D92)	320°F.(160°C.)
Autogenous Ignition Temperature (D2155)	835°F.(446°C.)
Vapor Pressure at 150°F. (66°C.)	0.4 torr
200°F. (93°C.)	1.6 torr
250°F. (121°C.)	5 torr
300°F. (149°C.)	12 torr

*These data are based upon samples tested in our laboratories and are not guaranteed for all samples.
**Sample refined by passage through Fullers Earth packed column at 40°C.

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Toxicity Statement

MCS 1889 has a single oral LD_{50} to albino rats of 13.0 g/kg and the single dermal LD_{50} to rabbits is greater than 7.9 g/kg. This material is considered to be practically non-toxic by ingestion in single doses and by single dermal applications.

The undiluted product is a moderate irritant to intact rabbit skin (average maximum score of 4.3 on a scale of 8) and a slight irritant to rabbit eye (average maximum score of 12.0 on a scale of 110). A group of 6 male rats survived a 6-hour exposure to air near saturation with vapor of this product at room temperature. The animals exhibited no adverse signs during the exposure and a subsequent 10-day observation period.

A repeated insult patch test was conducted on 50 human subjects with the undiluted product. No visible skin changes signifying reaction to injury were observed in any of the 50 subjects. Visible skin changes suggestive of sensitivity were observed in one individual. This hypersensitive individual did not react to a 1% solution of the test material in dimethyl phthalate. In the opinion of the consulting dermatologist, this product has a potential for sensitizing susceptible individuals and should, therefore, be handled with caution. He also offered the opinion that a 1% dilution of the test material appears to be innocuous even in apparently sensitized individuals.

Groups of 30 albino rats (15 male and 15 female) were fed MCS 1889 at dietary levels of 500 ppm, 2000 ppm, and 6000 ppm for 90 days. A similar group of 30 animals served as controls. There was no uptoward behavior, nor were there any death attributable to ingestion of the product. No statistical differences in the final body weight, food consumption or total weight gains were noted between the test and control group. There were no outstanding differences in hematology (hematocrit, erythrocyte, hemoglobin and total and differential leukocyte count), in blood chemistry (blood urea nitrogen and fasted blood glucose concentrations, and serum alkaline phosphatase and glutamine-pyruvic transaminase activities), or in urinalyses (glucose and albumin concentrations, pH, specific gravity, and microscopic examination) between the 6000-ppm test and control groups. There were no significant differences of platelet counts and prothrombin times between test and control animals. Treated animals did seem to show lower average coagulation times.

Following 90 days of feeding, 10 rats of each sex from both the control and 6000-ppm groups were sacrificed and given a gross examination. At that time, weights of liver, kidney, spleen, gonads, heart, and brain of each rat were determined. There were no intergroup differences in organ weights and their ratios which could be related to ingestion of the test product. There were no relevant gross findings and microscopic examination of about 30 tissues did not reveal any abnormalities.

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In a separate feeding study, a group of 9 rats were fed MCS 1889 at a dietary level of 1.0%. After 2 and 4 weeks on test, 3 animals were killed and the remaining 3 were transferred to a control diet for 2 weeks, following which time they were killed. At each interval, 3 control rats also were killed. Portions of muscle, liver, fat and kidney were taken from the test and control animals and analyzed for their content of MCS 1889. Liver and kidney samples of all treated animals were essentially negative. Muscle showed a slight and fat showed a moderate accumulation of MCS 1889 during the feeding period, but the levels decreased rapidly during the 2-week post-treatment period.

Acute static toxicity tests have been conducted with fingerling rainbow trout and bluegills. The 96-hour TL_{50} values are 32 ppm and 2 ppm, respectively.

MCS 1889 is readily biodegradable. In the semi-continuous activated sludge test at a feed rate of .5 mg, the disappearance in 24 hours was 56%.

HANDLING CHARACTERISTICS

Although no special precautions appear necessary based on the above data, good industrial practice as to housekeeping, personal hygiene, avoidance of prolonged and repeated skin contact and splashing in the eyes is indicated. Excessively high temperatures may produce irritating vapors (similar to petroleum oil).

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