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OS-16
Flame-Resistant Hydraulic Fluid

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Development Dept., Organic Chemicals Division
Monsanto Chemical Co., St. Louis 4, Mo.

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OS-16 is one of several Monsanto hydraulic fluids which offer the industrial user a particularly favorable combination of properties.

OS-16 is essentially non-toxic, is flame-resistant and has excellent lubricating qualities.

OS-16 is chemically an ester base compound which contains no halogenated hydrocarbons, salts or water.

Results obtained under actual operating conditions have demonstrated the excellent performance characteristics of OS-16 and have proven its value as a medium for power transmission.

OS-16 generally requires the use of specially chosen hose, packing and gasket materials. Such are available, however, from several sources.

Consideration of OS-16 is suggested for any of the widespread applications of hydraulic fluids. It is particularly recommended where the combination of non-toxicity, flame-resistance and high lubricity are of importance.

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FIELD RESULTS

Experience with Monsanto's hydraulic fluid OS-16 has proven its excellent operating characteristics under actual service conditions.

During a three month test and observation period, OS-16 was used in a standard make, hydraulically operated, coal-cutting machine, in underground mine service. Use of the machine was on a 24 hour day, three day week basis and was considered by the operators to be in the most strenuous cutting service. Operating pressure was 1500 pounds per square inch. At the conclusion of this test, the machine was taken out of service and disassembled for a complete examination. It revealed that the hydraulic system, pumps and all other moving parts in contact with OS-16 exhibited no evidence of wear. It was the opinion of experienced observers that OS-16 had proven eminently satisfactory under every operating condition imposed on it and the test results were accepted as a complete demonstration of its suitability.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, blue, oily liquid
Acidity	0.01%
Moisture	0.25% Max.
Odor	Slight, sweet
Refractive Index at 25°C.	1.507 to 1.510
Specific Gravity	1.088 to 1.095
Specific Heat	0.42 B.T.U./lb./°F.
Thermal Conductivity	0.047 B.T.U./hr./ft.^{2}/ft./°F.
Flash Point	435°F.
Fire Point	460°F.
Viscosity (centistokes) at 100°F.	11.05
at 210°F.	2.65
Viscosity Index	76
Pour Point	-70°F.

DATA ON HOSE, PACKING, GASKETS AND PAINTS

As OS-16 is a new type of hydraulic fluid, the hose, gaskets, packing materials etc. that were suitable for eariler types are not usually suitable for use with OS-16. There are available, however, as shown in the following, a number of elastomeric materials which may be considered suitable for use with OS-16:

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Use	Material	Vendor
All parts	TC-315	Plastics & Rubber Prod. Co. Los Angeles, California
Chevrons "O" rings	PS-85V PR-70	Linear, Incorporated Philadelphia, Pennsylvania
Chevrons "O" rings	10V70-111 10V85-94	E. F. Houghton & Company Philadelphia, Pennsylvania
Hose	1446A	Electrical Hose Company Wilmington, Delaware
Hose	Goodrich Butyl Tube Super Hose	Goodrich Rubber Company

Gasket materials complying with specifications AN-G-171 and AAF-40231 are suitable for use with OS-16. These are readily available through most packing vendors.

OS-16 has a tendency to soften and remove most finishes other than those that are baked. Paints resistant, however, to the action of OS-16 are available from the Arco Paint Company of Los Angeles and the Sherwin-Williams Company of Los Angeles.

TOXICITY

One of the valuable attributes of OS-16 is its essential non-toxicity necessitating no special precautions in handling or use. It is not a skin irritant in either the liquid or the vapor phase though vapors of it may cause slight eye irritation. Where such exposure is encountered the eyes should be washed with clear water. OS-16 should not, of course, be taken internally.

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For further information about OS-16 contact:

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