TEXAS EASTERN Transmission Corporation

INTER-OFFICE CORRESPONDENCE

Office: Shreveport, Louisiana
Engineering Department
Date: November 18, 1958

TO: ~~Mr. W. E. Worley~~ Carl Sisson

SUBJECT: 13,400 HP Penn-Jersey Stations; Fire Resistant Lube Oil Program

Attached hereto are 12 2 copies of Monsanto Technical Bulletin covering the OS-81 Lube Oil now in the above units.

These bulletins are for your distribution to the operating stations.- You will note that also included is the temperature-volume correction chart.

You have already been advised of the Quality Control Program.-

There is now a 500 gallon emergency supply in drums located at Monsanto's warehouse, Elizabeth, New Jersey. Any emergency order for this material should be placed through the New York Monsanto office. Drum and bulk (tank wagon - 2500 to 2800 gallons) are available through Monsanto's St, Louis office. These orders should for the present be placed with Mr. J. B. Davis or Mr. H. S. Litzsinger.

W. M. Stephens
W. M. Stephens

OMF/cl
atts.
cc. Messrs: ~~J. J. Bell w/att.~~ w/2
~~G. L. Jennings w/att.~~
~~O. M. Fletcher w/att.~~

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OS-81

FIRE RESISTANT TURBINE LUBRICANT

Technical Bulletin

November 11, 1958

Development Department
Monsanto Chemical Company

Organic Chemicals
Division

GENERAL INFORMATION

OS-81 is a wholly synthetic, fire-resistant fluid designed specifically as a turbine and compressor lubricant. Laboratory tests and field experience indicate it to be a satisfactory replacement for the normally used petroleum oil lubricants in these applications. OS-81 is used primarily for its fire-resistance which greatly reduces or eliminates the hazard of fire which is ever-present when petroleum lubricants are used.

OS-81 is intended exclusively for turbine and compressor lubrication and should never be used as the lubricant in an internal combustion engine. Its chemical characteristics make it entirely unsatisfactory for this purpose, and its use in an automobile engine, for example, might result in serious engine damage.

One of the outstanding characteristics of OS-81 is its excellent stability under severe conditions. In the ASTM Turbine Oil Oxidation Stability Test, for example, it has been found considerably more stable than even top quality petroleum base turbine oils. After 7000 hours in this test, its properties are essentially unchanged. An excellent petroleum oil will show significantly more property degradation in 1000 - 2000 hours. On this basis it is expected that only contamination of OS-81 with some foreign material will make it necessary to change the oil in an operating unit. It is most important that contamination be avoided.

PROPERTIES

Physical property specification limits and typical properties of OS-81 are given below:

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	Specification	Typical
Appearance	Opalescent pale yellow liquid	Opalescent pale yellow liquid
Specific Gravity at 77/77°F.	1.390 - 1.410	1.403
Neutralization Number, mgKOH/gram	0.10 max.	0.07
Water, % by weight.	0.10 max	0.03
Viscosity at 50°F., SUS		3872
60°F., SUS		1573
80°F., SUS		407.4
100°F., SUS	150.2 - 168.2	156.2
130°F., SUS		70.5
210°F., SUS	36.3 - 36.9	36.5
Pour Point, °F.	+20 max	+15
Specific Heat at 77°F., BTU/lb/°F.		0.31

FIRE RESISTANCE

OS-81, while not completely non-flammable, affords a high degree of resistance to ignition and burning. Flammability test data on OS-81 are as follows:

Autogenous Ignition Temperature (ASTM Method D286-30)	Greater than 1100°F.
Hot Manifold Test	No ignition at 1300°F. Highest temperature tried.
High Pressure Ignition Test	No flash or ignition of a high pressure spray of OS-81 exposed to an oxy-acetylene flame.

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