

Exxon HyJet V

Fire-Resistant Phosphate Ester Aviation Hydraulic Fluid

Product Description

Exxon HyJet V is a Type V fire-resistant phosphate ester hydraulic fluid, which is superior in thermal and hydrolytic stability to commercially available Type IV hydraulic fluids. Better stability means the extent of fluid degradation in aircraft systems will be less than Type IV fluids, in-service fluid life will be longer, and aircraft operator maintenance costs will be lower.

HyJet V provides excellent high and low temperature flow properties (kinematic viscosities) and rust protection. HyJet V has also demonstrated an improvement over the erosion protection performance afforded by Type IV fluids.

Features and Benefits

Exxon HyJet V offers the following key features and benefits:

| Features | Advantages and Potential Benefits |
|--|--|
| Higher stability than Type IV fluids | Longer fluid life, Lesser need to replace fluid due to degradation, Reduced hydraulic system maintenance costs |
| Meets Boeing BMS 3-11 and SAE AS1241 Type IV and Type V requirements | Improved flammability characteristics over meeting just the Type V requirements |
| Low density | Reduced weight of the hydraulic fluid carried by aircraft, Reduced aircraft fuel consumption, Lower operating costs |
| Excellent rust protection | Reduced the risk of equipment damage in the event of major water contamination |
| Excellent low and high temperature viscosity balance | Precise hydraulic system control and response even during extended range/polar flights, Longer aircraft hydraulic system equipment life |
| Excellent deposit control | Longer aircraft hydraulic system equipment life, Reduced maintenance costs |
| Improved protection against electro-chemical corrosion (erosion) | Protection against servo valve and pump damage |
| Fully compatible with all approved Type IV and Type V phosphate ester hydraulic fluids | Flexibility in use by airline operators |

Applications

Exxon HyJet V is designed for use in commercial aircraft phosphate ester hydraulic systems. It meets the SAE AS1241 requirements and is included in the Airbus/ATR NSA307110, Boeing BMS 3-11, Boeing-Long Beach

DMS 2014, and Bombardier Canadair BAMS 654-003 Qualified Products Lists. It is compatible in all proportions with commercial Type IV and Type V phosphate ester aviation hydraulic fluids.

Specifications and Approvals

| HyJet V | Meets | In Qualified Products List |
|---------------------------------------|-------|----------------------------|
| SAE Aerospace Standard AS1241, Type V | X | Not Applicable |
| Airbus NSA 307110M, Type V | X | X |
| Boeing BMS 3-11N Type V, Grade A | X | X |
| Boeing-Long Beach DMS 2014H Type 5 | X | X |
| Bombardier BAMS 654-003NC, Type V | X | X |
| ATR NSA307110M, Type V | X | X |

Typical Properties

| | Test Method | HyJet V (1) | Limits |
|---|--------------|--------------|---------------|
| Kinematic Viscosity, cSt | ASTM D 445 | | |
| at -53.9°C (-65°F) | | 1350 | 2000 max |
| at 37.8°C (100°F) | | 10.8 | 10.0 - 11.0 |
| at 98.9°C (210°F) | | 3.7 | 3.35 - 3.75 |
| Viscosity Index | ASTM D 2270 | 320 | |
| Shear Stability, % Viscosity Drop at 40°C | ASTM D 5621 | 21 | |
| Pour Point, °C (°F) | ASTM D 97 | <-62 (-80) | -62 (-80) max |
| Specific Gravity at 25°C/25°C (77°F/77°F) | ASTM D 4052 | 0.997 | 0.993 - 1.005 |
| Density at 15.6°C (60°F), g/mL (lb/gal) | ASTM D 4052 | 1.003 (8.37) | |
| Acid Number, mg KOH/g | ASTM D 974 | 0.05 | 0.1 max |
| Water, Karl Fischer, mass % | ASTM D 6304 | 0.1 | 0.2 max |
| Flammability | | | |
| Flash Point, °C (°F) | ASTM D 92 | 174 (346) | 160 (320) min |
| Fire Point, °C (°F) | ASTM D 92 | 185 (365) | 177 (350) min |
| Autoignition Point, °C (°F) | ASTM D 2155 | >427 (800) | 400 (752) min |
| Foaming Tendency/Stability, mL foam/sec to collapse | ASTM D 892 | | |
| Sequence I | | 10/10 | 250/100 max |
| Sequence II | | 10/10 | 150/50 max |
| Sequence III | | 10/10 | 450/250 max |
| Particle Count, NAS 1638 Class | Auto Counter | 5 | 7 max |
| Chemical Elements, ppm | | | |
| Calcium | | 7 | 20 max |
| Potassium | | 38 | 48 max |
| Chlorine | | 8 | 50 max |
| Sodium | | 5 | 15 max |
| Sulfur | | 50 | 200 max |

| Test Method | HyJet V (1) | Limits |
|--|------------------------------|---------|
| Electrical Conductivity at 20°C, microSiemens/cm | 0.4 | 0.3 min |
| Bulk Modulus, Isothermal secant at 100°F/3000 psi, psi | 210,000 | |
| Thermal Conductivity at 40°C, cal/sec/cm2/°C (Btu/hr/ft2/°F) | 33x10 ⁻⁵ (0.0799) | |
| Coefficient of Thermal Expansion, 25 to 100°C, per °C (per °F) | 0.00086 (0.00048) | |
| Specific Heat Capacity at 40 °C, cal/g/°C (same as Btu/lb/°F) | 0.42 | |

(1) Values may vary within modest ranges

Health and Safety

Based on available toxicological information, this product is not expected to produce adverse effects on health when used and handled properly. Information on use and handling, as well as health and safety information, can be found in the Material Safety Data Sheet (MSDS) which can be obtained from your local distributor or via the Internet on <http://www.exxonmobil.com/lubes>.

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