ExxonMobil

# HyJet™ IV-A Plus

ExxonMobil Aviation , Sierra Leone

Fire-Resistant Phosphate Ester Aviation Hydraulic Fluid

## Product Description

Mobil HyJet IV-Aplus is a fire-resistant phosphate ester hydraulic fluid designed for use in commercial aircraft. It is the best-performing Type IV fluid and approaches to a great extent many of the performance capabilities of Type V fluids, including high temperature stability, long fluid life, density, and rust protection. It is superior to all other Type IV fluids in these respects. Mobil HyJet IV-A plus meets the specifications of all major aircraft manufacturers and SAE AS1241.

## Features and Benefits

Mobil HyJet IV-A plus offers the following key features and benefits:

| Features | Advantages and Potential Benefits |
|---|---|
| Best in high temperature stability among Type IV fluids | Longer fluid life.<br>Lesser need to replace fluid due to degradation.<br>Reduced hydraulic system maintenance costs |
| Lowest density Type IV fluid | Reduced weight of the hydraulic fluid carried by aircraft.<br>Reduced aircraft fuel consumption, lower operating costs |
| Effective rust protection | Reduced the risk of equipment damage in the event of major water contamination |
| Excellent low temperature flow (viscosity) properties | Precise hydraulic system control and response even during extended range/polar flights.<br>Longer equipment life |
| Excellent deposit control | Longer equipment life.<br>Reduced maintenance costs |
| Excellent protection against electro-chemical corrosion (erosion) | Protection against servo valve and pump damage |
| Approved by all major aircraft manufacturers | Use as fleet lubricant by airline operators |
| Fully compatible with all approved phosphate ester hydraulic fluids | Flexibility in use by airline operators |

## Applications

Mobil HyJet IV-A plus fire-resistant aviation hydraulic fluid is used in commercial aircraft hydraulic systems where phosphate hydraulic fluids are recommended. It is compatible in all proportions with commercial Type IV and Type V phosphate ester aviation hydraulic fluids.

Mobil HyJet IV-A plus meets or exceeds the following industry and aircraft builder specifications. It is approved against all commercial aircraft manufacturer requirements and is included in their Qualified Products Lists.

## Specifications and Approvals

| This product has the following approvals: |
|---|
| AIRBUS NSA 307110N - Type IV, Low Density |
| Airbus Canada A2MS 564-003 Type IV, Class I, Grade A |
| CESSNA, Type IV |
| EMBRAER Type IV, Low Density |
| FOKKER Type IV, Low Density |
| GULFSTREAM 1159SCH302J - Type IV, Low Density |
| LOCKHEED C-34-1224C - Type IV, Low Density |
| ATR Type IV, Low Density |
| BOEING BMS 3-11P - Type V, Grade B and Grade C |
| BOEING BMS 3-11P - Type IV, Low Density |
| Boeing-Long Beach DMS2014H - Type 4 |
| BAE/AVROBAC.M.333C - Type IV, Low Density |

| This product meets or exceeds the requirements of: |
|---|
| SAE AS1241D, Type IV, Class 1 (low density) |

Properties and Specifications

| Property | |
|---|---|
| Acid Number, mgKOH/g, ASTM D974 | 0.04 |
| Autoignition Temperature, F, ASTM D2155 | 800 |
| Bulk Modulus, Isothermal secant at 100 F/3000 psi, psi, ASTM D6793 | 210000 |
| Calcium, ppm, ICPES | 103 |
| Chlorine, ppm, XRF | 10 |
| Coefficient of Thermal Expansion, 25 to 100 C, per degree C, API MPMS 11.1 | 0.00086 |
| Conductivity @ 20 C, MicS/cm, ASTM D2624 | 1.4 |
| Density @ 60 F, lb/USg, ASTM D4052 | 8.35 |
| Fire Point, Cleveland Open Cup, °F, ASTM D92 | 370 |
| Flash Point, Cleveland Open Cup, °F, ASTM D92 | 349 |
| Foam, Sequence I, Collapse Time, s, ASTM D892 | 15 |

| Property | |
|---|---|
| Foam, Sequence II, Collapse Time, s, ASTM D892 | 13 |
| Foam, Sequence III, Collapse Time, s, ASTM D892 | 16 |
| Four-Ball Wear Test, Scar Diameter, 10 kg, 600 rpm, 1 h, 75 C, mm, ASTM D4172 (mod) | 0.33 |
| Four-Ball Wear Test, Scar Diameter, 4 kg, 600 rpm, 1 h, 75 C, mm, ASTM D4172 (mod) | 0.22 |
| Four-Ball Wear Test, Scar Diameter, 40 kg, 600 rpm, 1 h, 75 C, mm, ASTM D4172 (mod) | 0.73 |
| Kinematic Viscosity @ 100 F, mm2/s, ASTM D445 | 10.6 |
| Kinematic Viscosity @ 127.6 C, mm2/s, ASTM D445 | 2.6 |
| Kinematic Viscosity @ -15 F, mm2/s, ASTM D445 | 130 |
| Kinematic Viscosity @ 210 F, mm2/s, ASTM D445 | 3.6 |
| Kinematic Viscosity @ -65 F, mm2/s, ASTM D445 | 1320 |
| Potassium, ppm, ICPES/AA | 38 |
| Shear Stability, % Kinematic Viscosity Loss, 40 C, %, ASTM D5621 | 22 |
| Sodium, ppm, ICPES | 1 |
| Specific Gravity, 25 C/25 C, ASTM D4052 | 0.996 |
| Specific Heat Capacity, cal/g-deg.C, Reference | 0.41 |
| Sulfur, ppm, ICPES/XRF | 224 |
| Viscosity Index, ASTM D2270 | 280 |
| Water Content, mass%, ASTM D6304 | 0.1 |
| Foam, Sequence I, Tendency, ml, ASTM D892 | 27 |
| Foam, Sequence II, Tendency, ml, ASTM D892 | 23 |
| Foam, Sequence III, Tendency, ml, ASTM D892 | 28 |
| Pour Point, °F, ASTM D97 / ASTM D5950 | -80 |
| NAS 1638 Class, HIAC, ISO 11500 | 7 |
| Thermal Conductivity at 40 C, Cal / (cm s oC), Reference | 0.00033 |

## Health and safety

Health and Safety recommendations for this product can be found on the Material Safety Data Sheet (MSDS) @ http://www.msds.exxonmobil.com/psims/psims.aspx

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Due to continual product research and development, the information contained herein is subject to change without notification. Typical Properties may vary slightly.

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