EASTMAN

Technical Data Sheet

Eastman™ Turbo Oil 2389

Applications

- Aerospace
- Aviation turbine oil (ato)

Key Attributes

- 3 cSt synthetic lubricant
- Cold weather

Product Description

Eastman Turbo Oil 2389™ is a low viscosity gas turbine oil, offering exceptional cold-start capability.

Many large commercial airlines use Turbo Oil 2389 in their auxiliary power units (APUs), because of the reliability it affords this equipment when starting after long, cold-soaks at altitude. Turbo Oil 2389 is the only MIL-PRF-7808 Grade 3 qualified oil that is fully approved in all Honeywell and UTC Aerospace Systems APUs. Turbo Oil 2389 is formulated from synthetic base stocks and advanced technology additives, to provide the combined thermal and oxidation stability properties of commercial Type II lubricants, with the low temperature fluidity characteristics of a 3 cSt oil. It also has load-carrying ability equal to, or better than, other approved MIL-PRF-7808 Grade 3 oils.

Typical Properties

Property	Test Method	Typical Value, Units
General		
Density		
@ 15°C	ASTM D 1298	0.9511 kg/L
Viscosity, Kinematic		
@ 100°C	ASTM D 445	3.19 mm^2/s
@ 40°C	ASTM D 445	12.46 mm^2/s
@ -51°C after 3 hours	ASTM D 2532	7,800 mm^2/s
Pour Point	ASTM D 97	-60 °C
Flash Point	ASTM D92	220 °C
Total Acid Number (Average)	ASTM D 664	0.20 mg KOH/g
Deposition Test[a]		
Acid Number Change	FED-STD-791, 5003	11.2 mg KOH/g
Average Viscosity Change	FED 5003	17.77 %
Oil Consumption	FED-STD-791, 5003	100 ml
Evaporation Loss		
6.5 hrs @ 205°C	ASTM D 972	20.0 %
Foaming Volume[b]		
110°C @ 1000 cc/min	FED-STD-791, 3214	20/8 ml/sec
110°C @ 1500 cc/min	FED-STD-791, 3214	55/8 ml/sec
110°C @ 2000 cc/min	FED-STD-791, 3214	170/18 ml/sec
80°C @ 1000 cc/min	FED-STD-791, 3214	15/8 ml/sec
80°C @ 1500 cc/min	FED-STD-791, 3214	45/8 ml/sec
80°C @ 2000 cc/min	FED-STD-791, 3214	105/15 ml/sec
Corrosion & Oxidative Stability[c]		
Aluminium Weight Change	FED-STD-791, 5307	0.00 mg/cm^2
Bronze Weight Change	FED-STD-791, 5307	0.04 mg/cm^2
Iron Weight Change	FED-STD-791, 5307	0.02 mg/cm^2
M-50 Weight Change	FED-STD-791, 5307	-0.02 mg/cm^2
Magnesium Weight Change	FED-STD-791, 5307	-0.02 mg/cm^2

Neut. No	FED-STD-791, 5307	0.96
Silver Weight Change	FED-STD-791, 5307	-0.02 mg/cm^2
Titanium Weight Change	FED-STD-791, 5307	0.00 mg/cm^2
Viscosity Change @ 40°C	FED-STD-791, 5307	9.5 %

[a]*Average deposition rating = 0.59*
[b]*Dynamic foaming characteristics*
[c]*96 hrs @ 200°C*

Comments

Properties reported here are typical of average lots. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.

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