

## Technical Data Sheet Eastman™ Turbo Oil 2389

### Application/Uses

- APU
- Aviation

### 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 Eastman™ 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. Eastman™ Turbo Oil 2389 is the only MIL-PRF-7808 Grade 3 qualified oil that is fully approved in all Honeywell and Hamilton Sundstrand APUs. Eastman™ 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 centistoke 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
Density @ 15°C	ASTM D 1298	0.9511 kg/L
Viscosity, Kinematic		
@ 100°C	ASTM D 445	3.19 mm <sup>2</sup> /s
@ 40°C	ASTM D 445	12.46 mm <sup>2</sup> /s
@ -51°C after 3 hours	ASTM D 2532	7,800 mm <sup>2</sup> /s
Pour Point	ASTM D 97	-60°C
Flash Point	ASTM D 92	220°C
Total Acid Number (Average)	ASTM D 664	0.20 mg KOH/g
Deposition Test <sup>a</sup>		
Acid Number Change	FED-STD-791, 5003	11.2 mg KOH/g
Average Viscosity Change	FTM 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 <sup>b</sup>		
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, 105/15 ml/sec 3214
110°C @ 1000 cc/min	FED-STD-791, 20/8 ml/sec 3214
110°C @ 1500 cc/min	FED-STD-791, 55/8 ml/sec 3214
110°C @ 2000 cc/min	FED-STD-791, 170/18 ml/sec 3214

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Corrosion & Oxidative Stability <sup>c</sup>

Aluminium Weight Change	FED-STD-791, 0.00 mg/cm <sup>2</sup> 5307
Silver Weight Change	FED-STD-791, -0.02 mg/cm <sup>2</sup> 5307
Bronze Weight Change	FED-STD-791, 0.04 mg/cm <sup>2</sup> 5307
Iron Weight Change	FED-STD-791, 0.02 mg/cm <sup>2</sup> 5307
M-50 Weight Change	FED-STD-791, -0.02 mg/cm <sup>2</sup> 5307
Magnesium Weight Change	FED-STD-791, -0.02 mg/cm <sup>2</sup> 5307
Titanium Weight Change	FED-STD-791, 0.00 mg/cm <sup>2</sup> 5307
Viscosity Change @ 40°C	FED-STD-791, 9.5% 5307
Neut. No	FED-STD-791, 0.96 5307

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<sup>a</sup> Average deposition rating = 0.59

<sup>b</sup> Dynamic foaming characteristics

<sup>c</sup> 96 hrs @ 200°C

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