Mobilgrease™ 33

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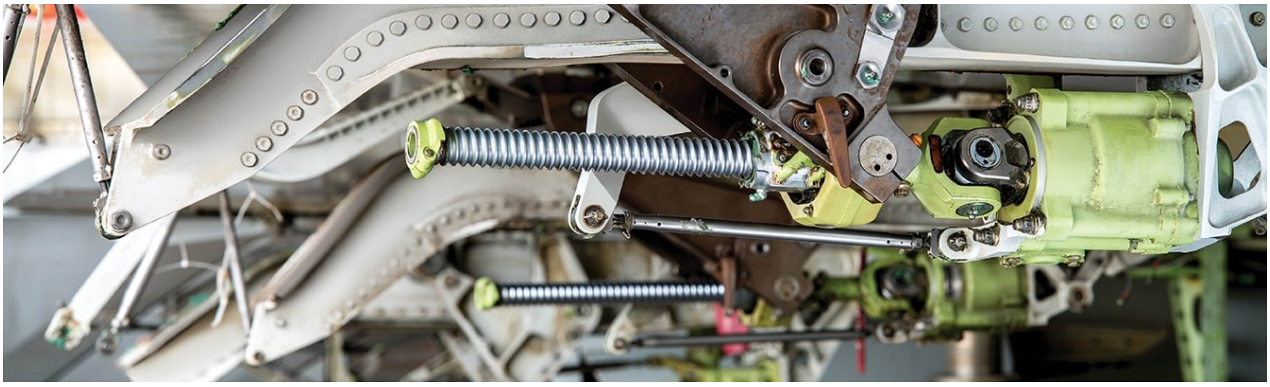

With a 10-year shelf life – offering more than three times the life of similar-type competitive greases – Mobilgrease™ 33 grease helps our partners optimize their shelf-life management programs, enabling potential cost savings.

Mobilgrease 33 is a high-performance, BMS3-33 multi-purpose airframe grease uniquely formulated with a proprietary blend of Polyalphaolefin (PAO) base oils and lithium complex soap. Unlike other commercially available BMS3-33 greases, this unique formulation is ester-free, providing superior performance and hydrolytic stability, excellent resistance to thermal and oxidative degradation, exceptional wear protection in heavy loaded pressure environments, without an offensive odor. Our ester-free blend offers exceptional performance in wet environments — to resist water washout and evaporation loss, protecting the grease from the deteriorating effects of hydrolysis.

Common grease point applications

- Outboard and inboard flaps
- Outboard and inboard slats
- Ground/flight spoilers
- Elevators and stabilizers
- Landing gear bushings
- Rudders

- Ailerons

Reasons to trust in Mobilgrease 33 aviation grease

1. 10-year shelf life helps airlines maximize inventory value
2. Mobilgrease 33 grease is approved for use in a wide range of applications, helping operators consolidate inventories and reduce costs
3. Its uniquely patented formulation helps maximize component life
4. Provides exceptional structural stability in extreme conditions and in adverse environments
5. Offers exceptional performance at high and low temperatures
6. Mobilgrease 33 grease lacks offensive odor and doesn't cause skin irritation

Where to buy

Contact an expert

Send to a colleague

Product information

Mobilgrease™ 33 performance profile 1.638 MB/pdf	**Download**	**Send to a colleague**

Data sheets

PDS	Product data sheet (PDS)
SDS	Safety data sheet (SDS)

Resources

	**How to convert to Mobilgrease™ 33: Compatibility of different brand-name greases** Learn best practices for converting to Mobilgrease™ 33 grease. English, Technical topics
	**Aviation lubricant shelf life** Find out the recommended shelf life of ExxonMobil aviation lubricants. English, Technical topics
	**Grease compatibility and conversion guidance** Learn what grease compatibility is, and how it impacts grease conversion and performance. English, Technical topics
	**Understanding oil bleed and grease separation** Learn what causes oil bleed and grease separation, how to identify what is normal and what is excessive, and how to minimize separation. English, Technical topics

Features and benefits

The lithium complex thickener system provides excellent structural stability and resistance to water wash-out. Polyalphaolefin base oil is used in Mobilgrease 33 because of its exceptional thermal/oxidative resistance potential, low volatility, and superb low-temperature capability, without the potential vulnerability of an ester base oil to degradation from reaction with water. The synthetic polyalphaolefin base oil offers excellent low-temperature mobility/pumpability and very low starting and running torque values. In addition, the state-of-the art additive system in Mobilgrease 33 provides superior rust and wear protection and load-carrying capacity compared to aviation greases that meet the minimum requirements of the MIL-PRF-23827 specification.

Mobilgrease 33, with its unique features, provides the following advantages and potential benefits:

Features	Advantages and potential benefits
High viscosity index polyalphaolefin basestock	Very wide operating temperature range - outstanding high and low temperature performance.Excellent lubricant film protection at high temperatures
Good storage stability	Grease structure integrity maintained - low oil separation
Exceptional resistance to thermal and oxidative degradation	Long grease and lubricated part service life
Resistance to degradation by water (hydrolysis)	No risk of corrosion induced by acidic base oil degradation products
Low volatility	Little vulnerability to significant base oil loss by evaporation in service
Excellent protection against wear, corrosion, and rusting	Excellent bearing and component protection
Extreme-pressure characteristics	Prevention of excessive wear, even under shock load
High resistance to water washout	Excellent grease performance in adverse weather and other water-exposure conditions

Applications

Mobilgrease 33 is a true multipurpose aviation grease intended for use in highly loaded anti-friction bearings, gears, and actuators as well as instruments, high speed bearings (though not recommended for wheel bearings), and general airframe lubrication, over operating temperatures from –100°F to 250°F (–73°C to 121°C). It can be used in all applications for which the aircraft manufacturer specifies U.S. Military Specification MIL-PRF-23827, Type I (Grease, Aircraft and Instrument, Gear and Actuator Screw, Grease thickened with metallic soap), Boeing BMS 3-33B (Grease, Aircraft, General Purpose), and Airbus AIMS09-06-

002/SAE AMS3052 (Grease, General Purpose, Airframe, Low Temperature Range, Lithium Thickened). Mobilgrease 33 is listed in the Qualified Products List of Airbus, Boeing, and the U.S. Military for these specifications. The NATO Code Number for Mobilgrease 33 is G-354.

Specifications and approvals

Mobilgrease 33	**Is Approved Against**	**Meets**
Airbus AIMS09-06-002	X	
Boeing BMS 3-33B Type 1	X	
MIL-PRF-23827C, Amendment 2, Type I	X	
NATO G-354	X	
SAE AMS3052		X

Typical properties

	Test Methods	**MIL-PRF-23827 Type I Requirements**	**Mobilgrease 33 (1)**
NLGI Grade			1 1/2
Thickener Type		Metallic Soap	Lithium Complex
Color	Visual		Blue Green
Structure/Consistency	Visual	Smooth, free from lumps and visual impurities	Pass
Odor	Olfactory	No rancid, perfume, or alcohol odor	Pass

	Test Methods	MIL-PRF-23827 Type I Requirements	Mobilgrease 33 (1)
Viscosity of Base Oil, cSt	ASTM D 445		
at 40 °C			12.5
at 100 °C			3.2
Dropping Point, °C (°F)	ASTM D 2265	165 (329) min	255 (491)
Low Temp. Torque at -73°C (-100°F), Nm	DEF STAN 05-50 Part 62, ASTM D 1478		
Starting		1.00 max	0.52
Running, after 1 Hr		0.10 max	0.06
Low Temp. Torque with 10% water at -73°C (-100°F), Nm	DEF STAN 05-50 Part 62, ASTM D 1478		
Starting			0.67
Penetration at 25°C (77°F), mm/10	DEF STAN 05-50 Part 63, ASTM D 217		
Unworked		200 min	285
60 Strokes Worked		270-310	292
100,000 Strokes Worked	FTM 313	270-375	330
Penetration, 100,000 Strokes Worked with 10% water, mm/10	DEF STAN 05-50 Part 63, ASTM D 217		330
Oil Separation, 30 Hrs at 100°C, wt %	ASTM D 6184	5 max	4

	Test Methods	MIL-PRF-23827 Type I Requirements	Mobilgrease 33 (1)
Evaporation Loss, 22 Hrs at 100°C, wt %	ASTM D 2595	2 max	1
Evaporation Loss, 500 Hrs at 121°C, wt %	ASTM D 2595		8.7
Copper Strip Corrosion, 24 Hrs at 100°C	ASTM D 4048	1b max	1b
AMS4640 Al/Ni Bronze Corrosion, 24 Hrs at 100°C	ASTM D 4048		Pass
Four Ball Wear, scar dia., 1200rpm/40kg/1hr/75°C, mm	ASTM D 2266		0.4
Load Wear Index, kgf	ASTM D 2596	30 min	110
Weld Load, kgf	ASTM D 2596		700
Timken OK Load, lbf	ASTM D 2509		55
Rust Protection, 48 Hrs at 125°F, ›1mm dia Spots	ASTM D 1743	0 in 2 out of 3 bearings	0,0,0
SKF EMCOR Rust, 3% NaCl, rating	ASTM D 6138		
Water Washout, 1 Hr at 38°C (100 °F), wt %	ASTM D 1264	20 max	3
Water Washout, 1 Hr at 79°C (174 °F), wt %	ASTM D 1264		6
High Temperature Performance, Hrs at 121°C	ASTM D 3336	1,000 min	2,200+
Oxidation Stability, pressure drop in kPa	ASTM D 942		

	Test Methods	MIL-PRF-23827 Type I Requirements	Mobilgrease 33 (1)
100 Hrs at 99°C		70 max	11
500 Hrs at 99°C		105 max	25
Fretting Wear, mg loss	ASTM D 4170		0.6
Dynamic Bearing Life, No of cycles	BMS 3-33-8.2		Pass
Navy Gear Wear Test, mg loss/1000 cycles	FTM 335		
2.3 kg load		2.5 max	1.1
4.5 kg load		3.5 max	1.6
Dirt Count, Particles/mL	FTM 3005		
25-74 Micron Size		1000 max	0
75 Micron or Larger		0	0
Storage Stability, 6 months at 40°C, Penetration, mm/10	FTM 3467		
Unworked	ASTM D 217	200 min	289
60x worked	ASTM D 217		288
60x worked, Difference from Unworked	ASTM D 217		1
Difference from Original	ASTM D 217	±30	2
Elastomer Compatibility, 168 Hrs at 70°C, % vol change	FTM 3603		
Nitrile (NBR-L, AMS3217/2)			+12.6

	Test Methods	MIL-PRF-23827 Type I Requirements	Mobilgrease 33 (1)
Thermoplastic Compatibility, 70 Hrs at 100°C, % vol change	ASTM D 4289		
Hytrel 6356 + 0.5% carbon black			3.4
Delrin 100 AF (ASTM D 4181)			+0.1
PTFE (Teflon) (AMS 3652)			+0.1
Nylatron GS			-0.5
(1) Values may vary within modest ranges			

Equipment builders

Features

Specifications

Mobil™ Aviation Grease SHC 100

Mobil Aviation Grease SHC 100 is a supreme performance synthetic grease which combines the unique features of a polyalphaolefin (PAO) synthetic base fluid with those of a high quality lithium complex soap thickener. The thickener system provides a high dropping point, excellent resistance to water wash, and a tenacious structural stability.

Energy lives here™

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Mobil Jet™ oils

Mobil Jet oils deliver performance to more than 11,000 engines (commercial, military and aircraft-type gas turbine) and are designed to meet today and tomorrow's aviation challenges.

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Nose-to-tail offer

These interactive schematics demonstrate our full nose-to-tail aviation fuels, oils, fluids and greases product offering for your commercial, general and military aircraft fleet.

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