



Braycote Micronic 600 EF

Grease, Rocket Propellant Cooler

Description

Castrol Braycote™ Micronic 600 EF is a smooth, buttery, translucent off-white colored, NLGI #2 grease. This product uses Castrol Brayco 815Z as the base fluid and a tetrafluoroethylene telomer as the gelling agent. This grease is nonflammable, chemically inert, and thermally stable and does not use any chlorofluorocarbons (CFCs) during product manufacture. It has exceptionally low volatility and has little tendency to form deposits. It has excellent lubricating properties, good sheer stability, and low acute toxicity. Castrol Fluoroclean™ X100 or Castrol Fluoroclean™ HE can be used to remove this lubricant. Refer to the data sheets for information regarding these products.

Application

Braycote Micronic 600 EF is designed to operate in the presence of fuels, oxidizers, and in applications of deep space vacuum. It is used in gears, ball and roller bearings, electrical contacts, and "O" rings. This grease is highly recommended for applications where temperature extremes and/or low vacuums are routine, such as cryogenic coolers, FLIR, laser optical systems, or hostile chemical environments. Perfluorinated greases, such as this product, exhibit excellent shelf life due to their intrinsic inertness.

Temperature Range: -80°C to 204°C (-112°F to 400°F)

Typical Characteristics

Name	Method	Units	Braycote Micronic 600 EF
Unworked Penetration	ISO 2137 / IP 50	0.1 mm	288
Worked Penetration (60 strokes @ 25°C / 77°F)	ISO 2137 / ASTM D217	0.1 mm	288
Oil Separation (30 hrs @ 204°C / 400°F)	FTM 321.2 / ASTM D6184	% wt	11.83
Copper Corrosion (24 hrs, 100°C / 212°F)	ASTM D4048	Rating	1b
Dropping point	ASTM D2265	°C/°F	209 / 409
Four Ball Wear test - Wear Scar Diameter (40 kgf / 75°C / 1200 rpm / 1 hr)	ISO 51350 / ASTM D2266	mm	0.80
Four Ball Wear test - Wear Scar Diameter (40 kgf / 204°C / 1200 rpm / 1 hr)	ISO 51350 / ASTM D2266	mm	1.29
Four Ball Weld Load test - Weld Point	ISO 11008 / ASTM D2596	kgf	700+
Vacuum Stability	ASTM E595 / NASA SP-R-0022A	Total Weight Loss (% wt) / Volatiles (%wt)	0.20/0.03
Low temperature Torque - starting torque @ -62°C / -80°F	ASTM D1478	N/m	0.057

Low temperature Torque - torque after 60 mins @ -62°C / -80°F	ASTM D1478	N/m	0.022
Low temperature Torque - starting torque @ -73°C / -100°F	ASTM D1478	N/m	0.148
Low temperature Torque - torque after 60 mins @ -62°C / -80°F	ASTM D1478	N/m	0.062
LOX Impact Sensitivity (100mm, 20drops)	-	Pass	Pass
High Temperature Bearing Life test	ASTM D3336	hrs	586+
Outgassing Performance - Total Mass Loss under vacuum (48 hrs @ 150°C / 302°F)	ASTM E597-07	% wt	0.04
Outgassing Performance - Vapour Pressure @ 60°C / 140°F	ASTM E1559	Torr	7x10 ⁻¹²
Outgassing Performance - Vapour Pressure @ 100°C / 212°F	ASTM E1559	Torr	6x10 ⁻¹⁰
Outgassing Performance - Vapour Pressure @ 150°C / 302°F	ASTM E1559	Torr	4x10 ⁻⁸
Density of finished grease @ 15°C / 59°F	In-house test	lb/gallon	15.70
Density of finished grease @ 15°C / 59°F	In-house test	g/ml	1.88
Specific Gravity @ 15°C / 59°F	ASTM D287	-	1.8531
Base Oil Density @ 15°C / 59°F	ASTM D4052 / DIN 51757D	kg/m ³	1848.9
Base Oil Viscosity @ 99°C / 210°F	ISO 3104 / ASTM D445	mm ² /s	45
Base Oil Viscosity @ 38°C / 100°F	ISO 3104 / ASTM D445	mm ² /s	148
Base Oil Viscosity @ -54°C / -65°F	ISO 3104 / ASTM D445	mm ² /s	10,855
Viscosity Index	ISO 2909 / ASTM D2270	-	350
Pour Point	ISO 3016 / ASTM D97	°C/°F	-72 / -100
Knudsen Vapour Pressure @ 20°C / 68°F	-	Pa	0.0000000000532
Knudsen Vapour Pressure @ 100°C / 212°F	-	Pa	0.000000266
Knudsen Vapour Pressure @ 200°C / 392°F	-	Pa	0.000266

Additional Information

Limitations

Braycote Micronic 600 EF is compatible with most commonly utilized materials, plastics and elastomers. It may be adversely affected by Lewis Acid Catalysts such as aluminum chloride at elevated temperatures. Newly exposed rubbing surfaces of aluminum, magnesium or titanium alloys may react with this product under certain conditions. Such systems should be thoroughly evaluated. Surfaces must be well cleaned of organic rust inhibitors prior to grease application to insure proper lubrication. This product is not recommended for use in applications under high vacuum with loads exceeding 100,000 psi for extended periods of time.

Packaging

Braycote Micronic 600 EF is packaged in 2 oz (AVDP) disposable polypropylene syringes and 1 pound jars.

Braycote Micronic 600 EF

10 Oct 2012

Castrol, the Castrol logo and related marks are trademarks of Castrol Limited, used under licence.

This data sheet and the information it contains is believed to be accurate as of the date of printing. However, no warranty or representation, express or implied, is made as to its accuracy or completeness. Data provided is based on standard tests under laboratory conditions and is given as a guide only. Users are advised to ensure that they refer to the latest version of this data sheet. It is the responsibility of the user to evaluate and use products safely, to assess suitability for the intended application and to comply with all applicable laws and regulations. Material Safety Data Sheets are available for all our products and should be consulted for appropriate information regarding storage, safe handling, and disposal of the product. No responsibility is taken by either BP plc or its subsidiaries for any damage or injury resulting from abnormal use of the material, from any failure to adhere to recommendations, or from hazards inherent in the nature of the material. All products, services and information supplied are provided under our standard conditions of sale. You should consult our local representative if you require any further information.

Castrol Industrial, Technology Centre , Whitchurch Hill , Pangbourne , Reading , RG8 7QR , United Kingdom

www.castrol.com/industrial