



Braycote 631A

Grease, Wide Temperature Range

Description

Castrol Braycote™ 631A is a smooth, buttery, translucent white NLGI #2 grease, based upon a perfluoroether oil. This grease is nonflammable and is in general chemically inert. It is thermally stable either alone or in the presence of oxygen, has exceptionally low volatility, and little tendency to form deposits. Castrol Fluoroclean™ X100 and Castrol Fluoroclean™ HE can be used to remove this lubricant. Refer to the data sheets for information regarding these products.

Application

Braycote 631A is used in gears, ball and roller bearings, electrical contacts, and as thread and elastomer lubricant. It is particularly useful as a lubricant in corrosive or oxygen (LOX/GOX) service and as a plug valve lubricant. This product is compatible with concentrated acids and bases and it does not hydrolyze or oxidize. Perfluorinated greases, such as Braycote 631A, exhibit excellent shelf lives due to their inertness.

Typical Characteristics

Name	Method	Units	Braycote 631A
Unworked Penetration	ASTM D217 / IP 50	0.1 mm	285
Worked Penetration (60 strokes @ 25°C / 77°F)	ISO 2137 / ASTM D217	0.1 mm	284
Copper Corrosion (24 hrs, 100°C / 212°F)	ASTM D4048	Rating	1b
Evaporation Loss (22hrs @ 204°C / 400°F)	ASTM D2595	% wt	1.96
Oil Separation (30 hrs @ 204°C / 400°F)	ASTM D6184 / FTM 321.2	% wt	9.06
Resistance to Wash-out by Distilled Water	FTM 5415	Pass	Pass
LOX Impact Sensitivity (1100mm, 20drops)	-	Pass	Pass
Four Ball Wear test - Wear Scar Diameter (40 kgf / 75°C / 1200 rpm / 1 hr)	ISO 51350 / ASTM D2266	mm	0.66
Low temperature Torque - starting torque	ASTM D1478	N/m	0.441
Low temperature Torque - torque after 60 mins	ASTM D1478	N/m	0.147
Dropping Point	ASTM D2265	°C/°F	182 / 360
Knudsen Vapour Pressure @ 20°C / 68°F	-	Torr	<9 x 10 ⁻⁷
Knudsen Vapour Pressure @ 100°C / 212°F	-	Torr	<9 x 10 ⁻⁴
Specific Gravity @ 20°C / 68°F	ISO 3675 / ASTM D1298	-	1.9137
Base Oil Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm ² /s	11.6
Base Oil Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm ² /s	490
Viscosity Index	ISO 2909 / ASTM D2270	-	117
Pour Point	ISO 3016 / ASTM D97	°C/°F	-36 / -30

Additional Information

Temperature Range

-30°C to above 204°C (22°F to above 400°F).

Limitations

Braycote 631A is insoluble or at most sparingly soluble in current fuels and oxidizers in propellant service, and in most organic solvents and materials other than fluorinated solvents. It is compatible with all commonly used metals, plastics, and elastomers. This product may be adversely affected by Lewis Acids, such as aluminum chloride, at elevated temperatures. Rubbing surfaces of aluminum, magnesium or titanium under certain conditions may react causing thermal degradation to the lubricant. 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 vacuum with loads exceeding 100,000 psi for extended periods of time.

Packaging

Braycote 631A is packaged in 1 pound jars.

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05 Dec 2012

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