



## Product Data

### Castrol Braycote® 631RP

Grease, Perfluoroether Rust Inhibited,  
Wide Temperature Range, Oxygen Compatible

#### Description

Castrol Braycote 631RP is a smooth, buttery, off-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 has little tendency to form deposits. In addition Braycote 631RP exhibits excellent lubricating properties, good dielectric properties, and shear stability. 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 631RP is designed for static or dynamic service in the presence of fuels and oxidizers. It has been used in gears, ball and roller bearings, electrical contacts, and as a thread and elastomer sealant. 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 631RP, exhibit excellent shelf lives due to their inertness.

#### Characteristics

TEST METHOD	DESCRIPTION	RESULT
D 1403	Penetration @ 25°C (77°F), mm <sup>-1</sup>	
	Unworked	284
	Worked, 60 strokes	285
D 2595	Evaporation Loss, % wt 22 hrs @ 204°C (400°F)	1.68
FTM 321	Oil Separation, 30 hrs, 204°C (400°F), % wt	9.89
D 1743	Rust Prevention Rating 48 hrs @ 52°C (125°F), 100% RH	1,1,1, Pass
FTM 5415	Water Washout, % wt 38°C (100°F), 1 hr	0.05
D 130	Copper Strip Corrosion 24 hrs @ 100°C (212°F)	1b
D 2266	Four-Ball Wear-Test, AWSD, mm 1200 rpm, 40 kgf, 75°C (167°F), 1hr	0.66
D 1478	Low-Temperature Torque, g.cm @ -54°C (-865°F)	
	Starting	4500
	Running, 1 hr	1500
D 2512 (MSFC 106)	LOX Impact Sensitivity 100 mm, 20 drops	Pass
D 3336	High Temperature Bearing Performance 10,000 rpm, 204°C (400°F), hrs	>500
D 566	Dropping Point, °C (°F)	183 (361)
<b>Base Oil Characteristics</b>		
D 287	Specific Gravity @ 20/20°C (68/68°F)	1.9137
D 445	Kinematic Viscosity, cSt @ 99°C (210°F)	11.6
	@ 20°C (68°F)	490
D 2270	Viscosity Index	117
D 97	Pour Point, °C (°F)	-36 (-30)

Health, safety and environmental information are provided for this product in the Materials Safety Data Sheet. This gives details of potential hazards, precautions and First Aid measures, together with environmental effects and disposal of used products. Castrol will not accept liability if the product is used other than in the manner or with the precautions or for the purpose(s) specified. Before using the product other than directed, please contact Castrol for consultation.

## **Additional Information**

### **Temperature Range**

-54°C to above 204°C (-65°F to above 400°F)

### **Limitations**

**Braycote 631RP** is only slightly soluble or insoluble in most current fuels and oxidizers in propellant service, and in most organic solvents and materials other than fluorinated solvents. It is compatible at normal operating temperatures with conventional metals, plastics and elastomers. **Braycote 631RP** may be adversely affected by Lewis Acids, such as aluminum chloride, at elevated temperatures. Newly exposed rubbing surfaces of aluminum, magnesium or titanium alloys may react with **Braycote 631RP** 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 vacuum and loads exceeding 100,000 psi for extended periods of time.

### **Packaging**

**Braycote 631RP** is packaged in 2 oz (AVDP) disposable syringes, 1 lb plastic containers, 1.75 lb cartridge and 45 lb pail.

Castrol Braycote 631RP  
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All reasonable care has been taken to ensure that the information contained in this publication is accurate as of the date of printing. However, such information may, nevertheless, be affected by changes in the blend formulation occurring subsequent to the date of printing. Material Safety Data Sheets are available for all Castrol Ltd products. The MSDS must be consulted for appropriate information regarding storage, safe handling and disposal of a product.

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