

## Castrol Braycote 631 RP

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.

### Typical 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), 1 hr	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)

Base Oil Characteristics		
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)

## 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, and the Castrol logo are trademarks of Castrol Limited, used under license

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 North America Inc. 150 West Warrenville Road, 605 3E Naperville, IL 60563  
Tel: (877) 641 1600 Fax: (877) 648 9801

[www.castrol.com/industrial](http://www.castrol.com/industrial)

Castrol Braycote 631 RP

Page 2 / 2

30 June 2009, Version 1