



## Braycote™ 296

Sub-Micronic, Extreme Low Volatility Grease

### Description

Castrol Braycote™ 296 (previously called Microcote™ 296) is smooth, off-white colored perfluoropolyether grease, in NLGI grade 2. It uses a proprietary base fluid thickened with a special tetrafluoroethylene gelling agent. This product is specially formulated to provide wear protection in most load and speed conditions under high or extreme vacuum conditions. It offer excellent lubricity, thermal stability, low volatility, good shear stability, low acute toxicity and contain no sodium or other alkali metal containing ingredients. This grease is nonflammable and chemically inert.

Castrol Brayco™ IC X-100 (previously called Fluoroclean™ X100) can be used to remove these lubricants. Refer to the data sheets for information regarding this product.

### Application

Braycote 296 is designed for use in extreme high vacuum critical particle count conditions which require antiwear lubrication. Typical applications include robotics used for semi-conductor production and other electronic applications. Braycote 296 grease can be used to lubricate bearings, gyros, gears, and also as an assembly lubricant for O-rings and elastomers.

Temperature Range: -50°C to 204°C (-58°F to 400°F)

## Typical Characteristics

Name	Method	Units	Braycote 296
Unworked Penetration	ISO 2137 / ASTM D217	0.1 mm	272
Worked Penetration (60 strokes @ 25 °C/77 °F)	ISO 2137 / ASTM D217	0.1 mm	272
Oil Separation (30 hrs @ 100 °C/212 °F)	ASTM D6184 / FTM 321.2	%wt	6.4
Four Ball Wear test - Wear Scar Diameter (40 kgf/75 °C/1200 rpm/1 hr)	ASTM D2266 / DIN 51350	mm	0.49
Four Ball Wear test - Wear Scar Diameter (60 kgf/75 °C/600 rpm/1 hr) Nitrogen	ASTM D2266 / DIN 51350	mm	0.67
Four Ball Weld Load test - Weld Point	ASTM D2596 / ISO 11008	kgf	800
Four Ball Weld Load test - Load Wear Index (27 °C /1770 rpm)	ASTM D 2596 / ISO 11008	-	166
Evaporation Loss (22hrs @ 204 °C/399.2 °F)	ASTM D2595	% wt	0.14
Copper Corrosion (24 hrs,100 °C/212 °F)	ASTM D4048	Rating	1b
Dropping point	ASTM D2265	°C/°F	256/492
Outgassing Performance - Total Mass Loss under vacuum (48 hrs @ 150 °C/302 °F)	ASTM E597-07	% wt	0.073
Outgassing Performance (150 °C/48 hrs) - Vapour Pressure @ 60 °C/140 °F	ASTM E1559	Torr	6 x 10 <sup>-12</sup>
Outgassing Performance (150 °C/48 hrs) - Vapour Pressure @ 100 °C/212 °F	ASTM E1559	Torr	3.5 x 10 <sup>-10</sup>
Outgassing Performance (150 °C/48 hrs) - Vapour Pressure @ 150 °C/302 °F	ASTM E1559	Torr	9.4 x 10 <sup>-7</sup>
Specific Gravity @ 15 °C/59 °F	ASTM D1298/ISO 3675	-	2
Low temperature Torque @ -73 °C/-100 °F - starting torque	ASTM D1478	Nm	0.14
Low temperature Torque @ -73 °C/-100 °F - torque after 60 mins	ASTM D1478	Nm	0.05
Density of finished grease @ 16 °C/60 °F	-	lb/gallon	16.76
Density of finished grease @ 16 °C/60 °F	-	g/ml	2.01

Subject to usual manufacturing tolerances.

## Additional Information

Braycote 296 exhibits excellent shelf life.

### Limitations

Braycote 296 is compatible with most commonly utilized metals, plastics and elastomers. These products may be adversely affected by Lewis Acids such as aluminum chloride, at elevated temperatures. Newly exposed rubbing surfaces of aluminum, titanium or magnesium alloys under certain conditions may react with Braycote 296. Such systems should be thoroughly evaluated. Surfaces must be well cleaned of organic rust inhibitors prior to grease application to insure proper lubrication.

### Packaging

Braycote 296 is available in 2 ounce (AVDP) syringes, 1.75 pounds jar and in 1 pound jars.

**This product was previously called Microcote 296. The name was changed in 2015**

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