



Product Data

Castrol Brayco[®] 815Z

Wide Temperature Range
Perfluorinated Polyether Lubricating Oil

Description

Castrol Brayco[®] 815Z is a clear water white perfluorinated polyether based fluid. It is virtually inert, compatible with rocket propellants and oxidizers, is unaffected by ultraviolet, cosmic radiation, or high vacuums. It has an exceptionally high viscosity index and low volatility, and has little tendency to form deposits. This product is highly recommended for use in applications at low temperature extremes and in high vacuum. It exhibits excellent lubricating properties, good dielectric properties, excellent shear stability, and low 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.

Temperature Range

-72°C to above 204°C (-100°F to 400°F) under normal operating conditions and up to 260°C (500°F) for brief periods.

Uses

Castrol Brayco[®] 815Z is essentially insoluble in current fuels and oxidizers, as well as in most organic solvents. This product is intended for use in extreme environments, and has been used successfully in many space missions and in sensitive electronic equipment. It is particularly suited for those applications where extreme vacuums and wide temperature variations are common. Perfluorinated fluids, in general, exhibit excellent shelf lives due to their intrinsic inertness.

Limitations

Castrol Brayco[®] 815Z is compatible with all 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 oil application to ensure proper lubrication.

Packaging

Castrol Brayco[®] 815Z is packaged in 2 ounce (AVDP) bottles and in 1 pound jars. A specially prepared "Micronic" grade - ultra filtered - is available on request.

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CASTROL BRAYCO® 815Z
TYPICAL PROPERTIES

TEST METHOD	DESCRIPTION	RESULT
D 287	Specific Gravity @ 16/16°C (60/60°F)	1.8531
	Pounds per Gallon @ 16°C (60°F)	15.430
D 445	Kinematic Viscosity, cSt @ 99°C (210°F) @ 38°C (100°F) @ -40°C (-40°F) @ -54°C (-65°F)	45 148 6,500 10,855
D 2270	Viscosity Index	350
D 97	Pour Point, °C (°F)	-72 (-100)
BOC	Evaporation Loss, % wt 72 hrs, 232°C (450°F)	0.36
D 664	Acid Number, mgKOH/g (end point, pH=8.2)	0.01
Knudsen	Vapor Pressure, torr @ 20°C (68°F) @ 100°C (212°F)	4×10^{-13} 2×10^{-9}
E 595 NASA SP-R-0022A	Vacuum Stability Test Total Weight Loss, % wt Volatile Condensable Material, % wt	0.081 0.012

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TEST METHOD	DESCRIPTION	RESULT
FTM 3009	Solid Particle Contamination Number of Particles per 100 mL 5 - 15 microns 16 - 25 microns 26 - 50 microns 51 - 100 microns + 100 microns	163 42 16 4 Nil

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.