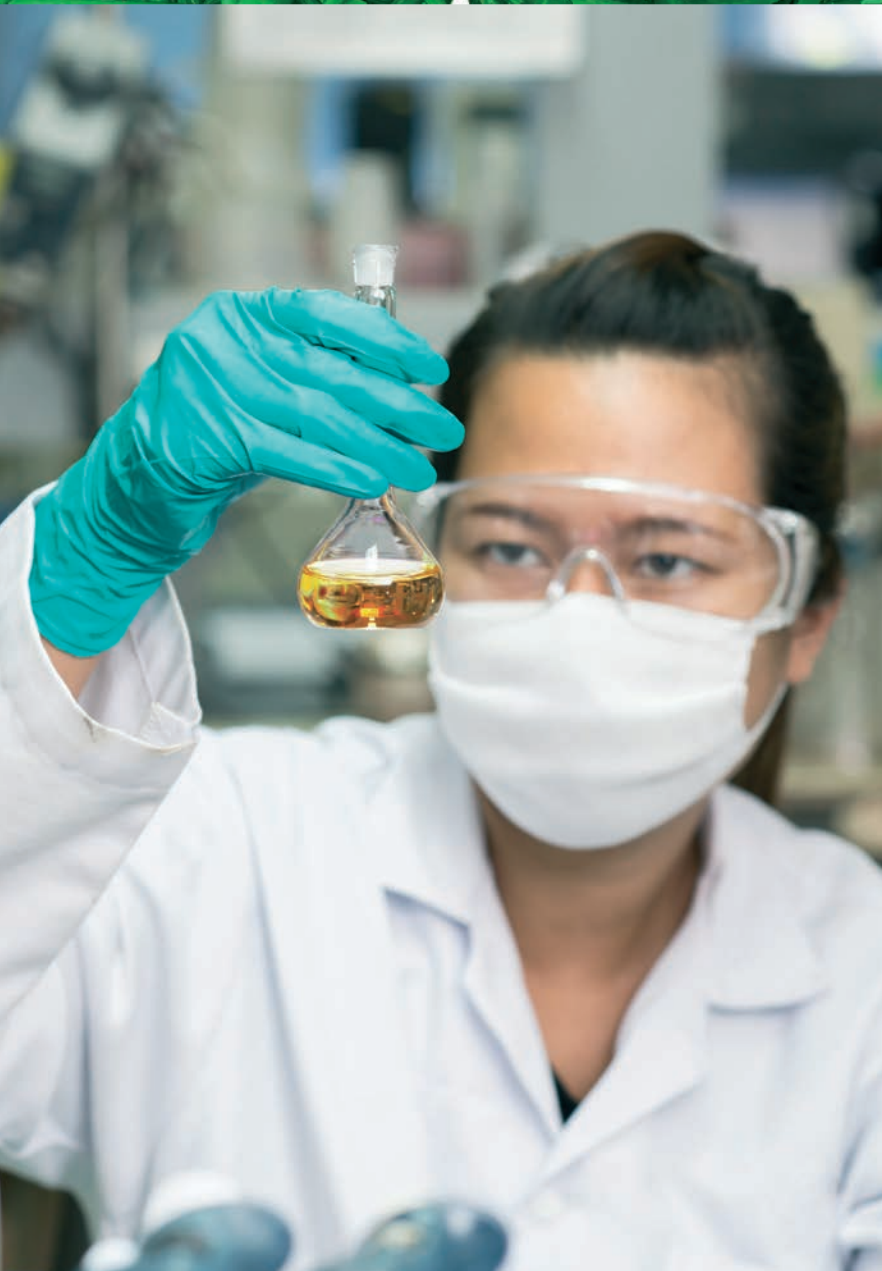




HIGH PERFORMANCE TECHNOLOGY FOR THE CLEANROOM INDUSTRY



Castrol® provides high technology lubricants – including high performance oils and greases – for use in ultra-clean environments. We market our products to OEMs and assemblers within the semiconductor, disk drive, instrumentation/electrical goods, aerospace and medical industries.

Since the mid-1990s, our cleanroom lubricants have enhanced equipment functions by reducing lubricant outgassing, as well as reducing the formation of particulates and chemical reactions. In addition, Castrol cleanroom lubricants are virtually free of metallic elements and other harmful contaminants. Castrol's cleanroom lubricants include perfluoropolyether-based products that offer proprietary chemistries that exhibit superior performance in reducing friction and increasing component life. Our line of specialty application products is ideal for vacuum, cleanroom and reactive chemical (e.g. oxygen) environments and applications.

Typical areas where Castrol products can be used include the lubrication of ball bearings, roller bearings, linear motion components, key miniature bearings, sinter bearings, lead screws, vacuum pumps, valves, wafer lifts and process chamber shutters. Our products also perform extremely well in other applications where evaporative weight loss at high temperature, vapor pressure and/or low temperature performance are critical.

Castrol's research and development capabilities provide the analysis our customers need to determine the best lubrication solutions for their critical applications.

IT'S MORE THAN JUST OIL. IT'S LIQUID ENGINEERING.®



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CASTROL SPECIALTY OILS

PRODUCT	KINEMATIC VISCOSITY, cST			EVAPORATION WT LOSS %	VAPOR PRESSURE	
	100°C	40°C	-40°C		@20°C	@100°C
Castrol® Brayco® 815Z	45 (99°C)	148 (38°)	6,500	0.36 72 hrs @ 232°C (450°F)	4x10 ⁻¹³	2x10 ⁻⁹
Castrol® Brayco® 1624	4.2	24	17,500	13 22 hrs @ 149°C (300°F)	4x10 ⁻⁶	7x10 ⁻³
Castrol® Brayco® 1625	11.6 (99°C)	97.00 (38°)	N/A	0.79 22 hrs @ 149°C (300°F)	<9x10 ⁻⁵	<9x10 ⁻³

CASTROL SPECIALTY GREASES

PRODUCT	NLGI GRADE	TEMPERATURE RANGE	EVAPORATION WT LOSS % / 22 HRS, 204°C	BASE OIL VAPOR PRESSURE	
				@20°C	@100°C
Castrol® Braycote® 803	2	-62°C to 260°C (-80°F to 499°F)	0.33	<1x10 ⁻¹⁰	<1x10 ⁻⁷
Castrol® Braycote® Micronic 1613	2	-72°C to 204°C (-100°F to 400°F)	0.18	4x10 ⁻¹³	2x10 ⁻⁹
Castrol® Braycote® 1632	2	-40°C to 232°C (-40°F to 450°F)	1.0	4x10 ⁻¹²	<8x10 ⁻⁷
Castrol® Braycote® 296	2	-50°C to 204°C (-58°F to 400°F)	0.14	5x10 ⁻¹³ for whole grease (extrapolated)	5x10 ⁻¹³ for whole grease (extrapolated)
Castrol® Tribol® GR 215-2	2	-40°C to 150°C (-40°F to 302°F)	0.12 (22 hrs, 100°C)	N/A	N/A

CASTROL SPECIALTY CLEANERS AND SOLVENTS

PRODUCT	DESCRIPTION
Brayco® IC X-100	Designed for use in grease plating perfluorinated lubricants and other halogenated lubricants. Compatible with most metals, plastics and elastomers.

This data sheet and the information it contains are 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.

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