



Product Data

Optigear ALR X1

High performance gear oil

Description

Castrol Optigear™ ALR X1 is a high performance synthetic gear oil designed for lubrication of robot gear boxes. Based on a combination of additives to provide excellent bearing performance, good load carrying and outstanding thermal stability. This synthetic based gear oil is also designed to give an extremely low sludge forming propensity as well as good elastomer/seal compatibility with minimal interaction.

Optigear ALR X1 has also been coloured yellow in order for Robot manufacturers and End Users to immediately visually detect any leakages.

Application

Castrol Optigear™ ALR X1 is designed for use in Robot gear box systems where oil lubrication is preferred to grease due to high speeds and ease of change over. ALR X1 is intended to extend oil change intervals versus current commercially available products allowing for lower downtime and increased maintenance intervals for oil lubricated systems.

Extended elastomer/seal compatibility testing highlights the low interaction of Optigear ALR X1 with common seal materials, critical for reduced or no leakage within oil lubricated robots.

Optigear ALR X1 also has a very low pour point and excellent viscosity and temperature characteristics, allowing use in both low and high temperature applications.

Optigear ALR X1 is classified as follows:

DIN Classification is CLP

Optigear ALR X1 meets the requirements of:

DIN 51517 Part 3

Advantages

- Good thermal and oxidative stability provides reliable operation and extended operating life when compared to mineral oil based products.
- Inherently high viscosity index (VI) makes the product suitable for operations operating over a wide temperature range.
- Good anti-wear and load carrying abilities minimises gear wear and prolongs gear tooth life.
- Reduced down time through water separation and demulsification characteristics resulting in prolonged lubricant life and increased equipment reliability.
- PAO based lubricant that provides good compatibility with seals, paints and mineral oil based lubricants.

Typical Characteristics

Name	Method	Units	ALR X1
Appearance	Visual	-	Clear yellow oil
Density @ 15°C / 59°F	ISO 12185 / ASTM D4052	kg/m ³	870
Kinematic Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D 445	mm ² /s	150
Kinematic Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D 445	mm ² /s	17.8
Viscosity Index	ISO 2909 / ASTM D2270	-	>145
Pour Point	ISO 3016 / ASTM D97	°C/°F	-42/-44
Foam Sequence I - tendency / stability	ISO 6247 / ASTM D892	ml/ml	10/0
Water Separation @ 82°C / 180°F (40/37/3)	ISO 6614 / ASTM D1401	minutes	15
Flash Point - open cup method	ISO 2592 / ASTM D92	°C/°F	230/446
Copper corrosion (3 hrs@100°C/212°F)	ISO 2160 / ASTM D130	Rating	1
Rust test - synthetic seawater (24 hrs)	ISO 7120 / ASTM D665B	Rating	Pass
Four Ball Wear	ASTM D2783	mm Scar diameter	0.3
FZG Gear Scuffing test - A/8.3/90	ISO 14635-1	Failure Load Stage	12
FE-8 Bearing Wear test (F.562831.01-7.5/80-80)	DIN 51819-3	Roller wear (Mw50), mg	<2

Subject to usual manufacturing tolerances.

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04 Nov 2025

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