

Starplex[®] HD 2 M3

(formerly Delo[®] Starplex Moly 3% EP 2)



Product Description

Starplex[®] HD 2 M3 is a premium, multipurpose EP grease.

Customer benefits and product features

Customer benefits

- **Protects metal surfaces**
Effective EP additive and additional molybdenum disulfide solid film lubricant protects against component wear under severe conditions and shock loading. Rust and corrosion inhibitors protect metal surfaces, even in conditions of severe water exposure
- **Minimizes downtime**
High dropping point minimizes leakage from bearings at elevated temperatures, and excellent oxidation resistance ensures long grease life. Natural water resistance of the lithium complex thickener, the effective tackiness additive and the additional molybdenum disulfide solid film lubricant prevent lubricant failure, even under the wettest conditions.
- **Ease of application**
Good pumpability characteristics of the lithium complex thickener provide suitable flow properties for most centralized lubrication system applications.
- **Reduces complexity**
Multipurpose capability allows use in a wide range of automotive and industrial applications, reducing the number of different greases required and eliminating product misapplication.

Product features

- **Starplex[®] HD 2 M3** contains an ISO 460 base oil, lithium complex thickener, EP additives, rust and oxidation inhibitors, tackiness additives, and molybdenum disulfide.

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Applications

Can include:

- Construction equipment, such as bulldozers, scrapers, earthmovers and cranes
- Backhoes and shovels
- Road rollers
- Bushings and rolling element bearings
- Agricultural tractors, combines and cotton pickers
- Mining equipment
- Heavy-duty transport

Usable temperature range in continuous service is -25 to 130°C.
Maximum temperature for short term exposure is 210°C.

Product approvals, performance and recommendations

Performance

- ISO 6743-9 ISO-L-XBDEB 2
- DIN 51502 KPF2K-30

Meets the requirements of the following OEM specifications:

- Caterpillar Multipurpose Molybdenum Grease (MPGM) Specification containing 3% molybdenum disulfide (Cat Prime Application Grease NLGI 2)
- Bucyrus SD 4711 MPG - multipurpose grease specifications
- Komatsu Mining Germany Works Standard
- Liebherr GRE-1, GRE-4, GRE-5 grease specification

Service Considerations

The inclusion of molybdenum disulfide provides an extra measure of protection under shock loading which is very common in construction, off-highway transport, and agricultural usage. During heavy shock loading, the lubricant film between metal

surfaces can be temporarily ruptured or squeezed out. When using Starplex[®] HD 2 M3, some molybdenum disulfide stays in place as a solid film lubricant to protect metal surfaces, even under extreme shock loading conditions, preventing metal-to-metal contact which could cause component damage. The presence of molybdenum disulfide is also valuable in dirty environments, or when proper re-greasing intervals cannot be followed.

Not recommended for constant-velocity joints on front wheel drive vehicles.

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Typical Test Data

STARPLEX [®] HD 2 M3	TEST METHOD	RESULTS
Product Code		510881
NLGI Grade		2
Thickener Type		Lithium Complex
Dropping Point, °C	ASTM D2265	230+
ISO Viscosity Grade Base Oil Equivalent		460
Oil Viscosity, mm ² /s @ 40°C	ASTM D445	460
mm ² /s @ 100°C	ASTM D445	30.7
Molybdenum Disulfide, m%		3
Penetration, Worked @ 25°C	ASTM D217	280
Timken OK Load, kg	ASTM D2509	>25
Four Ball Weld Point, kg	ASTM D2596	620

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ENVIRONMENT, HEALTH and SAFETY. Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit the [Product Information Center](#).

This Product Data Sheet (PDS) was produced for the Asia Pacific region based on the best available information at the time of issue. The specific information included may not directly reflect the market or conditions, and may vary. For the most up-to-date, country-specific information, please contact your local customer service center.