



MARFAK[®] BIO ELITESYN HD 2

(FORMERLY CLARITY[®] SYNTHETIC EA GREASE)

PRODUCT DESCRIPTION

Chevron's Marfak[®] Bio EliteSyn HD Grease is an anhydrous calcium-thickened lubricating grease based on biodegradable esters. It is compliant to 2013 VGP legislation and the Swedish Standard 155470. The grease contains antioxidants, corrosion inhibitors, and extreme pressure and anti-wear additives. The thickener, together with the biodegradable esters, makes the product suitable for lubrication of heavily loaded applications. The lubricating grease has excellent adhesion and water resistance.

CUSTOMER BENEFITS

Marfak Bio EliteSyn HD Grease delivers value through:

- **Environmentally acceptable** — Meets the requirements of the EPA Vessel General Permit (VGP) for biodegradation, low toxicity and low bioaccumulation.
- **Water resistance** — Provides satisfactory lubrication in the presence of water and is not washed out of bearings.
- **Corrosion protection** — Rust-inhibited to protect steel and nonferrous-bearing surfaces against corrosion.
- **Multipurpose** — Satisfies all grease requirements of the majority of marine equipment.
- **Pumpability** — Can be used over a wide temperature range in centralized lubrication systems.

APPLICATIONS

Marfak Bio EliteSyn HD is a versatile, high performance, environmentally acceptable lubricant (EAL) developed for a wide variety of applications where environmental sensitivity and biodegradability may benefit operations or may be a requirement due to legislative demands.

While primarily designed for marine applications, Marfak Bio EliteSyn HD can also be applied to a diverse range of other applications including the forestry, agriculture, and construction industries where the combination of exposed applications and operating conditions may result in an increased risk of lubricants coming into contact with the surrounding environment.

For marine applications, Marfak Bio EliteSyn HD can be recommended for a range of plain and rolling element bearings or slide-ways in a variety of on-deck equipment including:

- Boom pins, and crane pulleys
- Anchor winches
- Wire ropes
- Deck equipment bearings
- Cargo door hinges
- Thruster and rudder bearings

Open gear or rack and pinion systems where conditions of operation do not require dedicated products containing solid lubricant technology.

Examples of applications in other areas where Marfak Bio EliteSyn HD may also be used include the general lubrication points on steering or chassis components of forestry, agricultural and construction vehicles as well as saw chains within the forestry segment, where a biodegradable grease is required.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A **Chevron** company product

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It is also important to note that Marfak Bio EliteSyn HD offers excellent low temperature mobility and is therefore suitable for use in most modern centralized lubrication systems.

This product is especially suited for applications where risk of contamination in soil or water may occur.

TYPICAL TEST DATA

NLGI Grade	Test Method	2
Product Number		238009
SDS Number		39898
Operating Temperature, °C(°F) Minimum ^a Maximum ^b		-40(-40) 100(212)
Penetration at 25°C (77°F), Worked (60 strokes)	ASTM D217	265-295
Dropping Point, °C (°F)	ASTM D2265	> 140 (284)
Four Ball Weld Point, kg	ASTM D2596	315
Water Spray-off, wt%	ASTM D4049	< 50
Water Washout at 38°C (100°F), wt%	ASTM D1264	<10
Flow Pressure at -40°C (-40°F), mbar	DIN 51 805	<1400
Biodegradability, %	OECD 301 B	65
Base Oil Viscosity, Kinematic* cSt at 40°C cSt at 100°C	ASTM D445	500.0 53.0
Thickener Type		Anhydrous Calcium
Base Fluid		Synthetic Ester
Texture		Smooth/Tacky
Color		Yellow

- a Minimum operating temperature is the lowest temperature at which a grease, already in place, could be expected to provide lubrication. Most greases cannot be pumped at these minimum temperatures.
- b Maximum operating temperature is the highest temperature at which the grease could be used with frequent (daily) relubrication.
- * Determined on mineral oil extracted by vacuum filtration.

Minor variations in product typical test data are to be expected in normal manufacturing.

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