

Omega 646

DESCRIPTION:

Omega 646 is a fluid lubricant engineered exclusively for chains. It employs the high technology originally derived from the space age in which a super micronized solid lubricant -moly -is used to complement a high-grade, refined paraffinic oil in the lubrication of chains.

CHAIN LUBRICATION PROBLEMS:

Conventional chain oils and greases lubricate by separating the load surfaces with a hydrodynamic film. This film cannot always be achieved in actual "in use" situations. Formation of this film is a function of many variables such as lubricant viscosity, surface speed and applied load. When speeds are too low, loads are too high, or there is an improper match of lubricant to viscosity to speed and load; and a plethora of other variables, metal-to-metal contact occurs to increase friction and subsequent excessive wear.

These conditions are not uncommon. They exist in normal operation such as during machinery start up, shutdown, during running-in of a replaced part and all through the operation of many heavily-loaded, slow-moving parts prevalent in chain driven machinery. A phenomena known as "chatter" or "stick slip" occurs and there is no lubrication between the chain and gear wheels!

PREVENTS METAL-TO-METAL CONTACT:

Omega 646 absolutely prevents any metal-to-metal contact in the absence of hydrodynamic film. Under load, the micronized platelets present in Omega 646's moly, slide easily upon one another to prevent metal contact. No other conventional lubricant can do so. Omega 646's specialized moly will keep lubricating up to an approximately limit of 750°F (400°C). Therefore Omega 646 can be used in the most demanding, tough and high temperature chains without breakdown or deterioration.

MULTITUDE OF MAINTENANCE USES:

Omega 646 Fluid Lubricant For Chains is versatile. It promotes chain and parts life.

RUNNING IN:

Every new metal surface under a microscope is actually a series of valleys and peaks. When two such surfaces come into contact, only the peaks meet. Therefore these very small areas bear the entire load. These peaks "cold weld" together, then shear apart when movement occurs. Omega 646 -when applied to new parts before operating -can prevent actual contact between the peaks and prevent galling, scoring and catastrophic parts failure.

The moly in Omega 646 permits the surfaces to conform to each other by plastic deformation rather than potentially destructive welding and shearing. Omega 646 permits optimum run-in lubrication for new machine parts.

SLOW-MOVING PARTS:

Ordinary lubricants fail to achieve a hydrodynamic film between slow moving parts under high load. Omega 646 will separate such surfaces even at rest and its low coefficient of friction prevents chatter and stick-slip operation.

PREVENTING FRETTING CORROSION:

In limited motion machinery, vibration prevents the forming of hydro-dynamic lubricant film between parts. Conventional lubricants literally vibrate off or migrate away. Omega 646's moly remains in place, reducing metal-to-metal contact and fretting corrosion.

ANTI-FRICTION BEARINGS:

When bearings overheat, ordinary grease components thin out excessively. Omega 646's moly will continue to protect such surfaces.

SUPERIOR FOR CHAIN LUBRICATION:

Omega 646 is formulated from the ground up with expensive, high-performance constituents. The base suspension lubricant is a high quality, refined paraffinic which displays superior lubrication action and anti-oxidation qualities.

Special viscosity improvers give Omega 646 a stability to temperature fluctuations for lubrication superior to all conventional chain lubricants. It will markedly improve chain lubricity and lower drag on all machinery components dramatically to save

operating costs.

APPLICATION:

Omega 646 can be applied directly onto chains and machine parts by either dipping, using a brush or bath or by drip feed. Any fling-off that may be encountered in certain high-speed chains immediately after application can be ignored as the moly in Omega 646 will hold tenaciously onto the applied surfaces where lubrication is most critical. Omega 646 is used for superior lubrication of all types of chains - conveyors, gear drives, pulleys, etc. and will withstand the punishing high temperature conditions found in dryers and stenters.

TYPICAL DATA:

TEST	ASTM TEST METHOD	SAE 40	SAE 50	SAE 90
ISO Viscosity Grade	D-2422	68	150	220
Appearance	Visual	Black Opaque, Tacky		
Density, Kg/L @ 15°C	D-1298	0.875	0.890	0.893
Viscosity, cSt @ 40°C	D-445	76	150	220
@ 100°C	D-445	14.0	19.1	21.3
Viscosity Index	D-2270	191	183	115
Flash Point, COC, °C(°F)	D-92	204(399)	218(424)	264(507)
Pour Point °C(°F)	D-97	-30(-22)	-25(-13)	-22(-8)
Total Base Number, mg KOH/g	D-2896	11.6	11.6	8.2
Foaming Characteristics -				
All Sequences, After Settling	D-892	Nil	Nil	Nil
Rust-Preventing Characteristics				
48 hours saltwater	D-665	Pass	Pass	Pass
Molybdenum Disulphide, % Mass*	Gravimetric	1.0	1.0	1.0

* MoS₂ contribution 0.9

MAGNA INDUSTRIAL CO. LIMITED

Total Quality Maintenance

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MATERIAL SAFETY DATA SHEET

DATE 01 Aug 2014

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product Name/Code Omega 646

Company Identification

Omega Manufacturing Division,
Magna Industrial Co. Limited,
1801, Guardian House,
32 Oi Kwan Road,
Wanchai, Hong Kong.

Distributor

Alshawi Trading,
Block 351, Road 51, Bldg 20, Manama - Bahrain.
www.alshawitrading.com
info@alshawitrading.com
P.O.Box 33526

Telephone (852) 25775187
Fax (852) 25773190

Telephone (973) 1755 0019
Fax (973) 1755 5108

SECTION 2 - HAZARDS IDENTIFICATION

Not classified as hazardous.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS Number</u>	<u>Wt.%</u>	<u>Classification</u>
Highly refined mineral oil**	64742-65-0	30-60	-
Highly refined mineral oil**	64742-62-7	30-60	-
Molybdenum disulphide	1317-33-5	1-10	-

SECTION 4 - FIRST-AID MEASURES

Eye Contact: Flush with plenty of water for at least 15 minutes. Seek immediate medical attention.

Skin Contact: Wash thoroughly with soap and water. Obtain medical attention in case of skin irritation or other cause for concern.

Inhalation: Move patient to open air.

Ingestion: Do not induce vomiting. Seek immediate medical attention.

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SECTION 5 - FIRE-FIGHTING MEASURES

Extinguishing Media: Dry chemical, waterfog, foam, sand and carbon dioxide.

Special Protective Equipment for Fire Fighters: Self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Dense smoke. Carbon dioxide, carbon monoxide.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spillage: Transfer bulk of material into another container. Absorb remaining residue with proper absorbents such as sand, vermiculite. Sweep up and dispose of in accordance with local and national regulations.

SECTION 7 - HANDLING AND STORAGE

Keep containers closed. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Wash clothing before reuse. Keep away from feed and food products.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ACGIH TLV

Highly refined mineral oil	5 mg/m ³ (oil mist)
Molybdenum disulphide	15 mg/m ³

Eye Protection: Safety goggles and full-face shield

Hand Protection: Rubber or plastic oil resistant gloves.

Ventilation: Use under well ventilated conditions.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark grey liquid

Odour: Mineral oil odor

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pH: N.A.
Specific Gravity: 0.85-0.90
Vapour Pressure: N.A.
Boiling Point: N.A.
Melting Point: N.A.
Flash Point: above 200°C
Flammability: N.A.
Evaporation Rate: N.A.
Solubility in Water: Insoluble

SECTION 10 - STABILITY AND REACTIVITY

Stable under normal condition.

Materials to Avoid: Strong oxidizing agents, hydrogen peroxide, chromic acid, bromine.

Toxic compounds may form on thermal decomposition. Hazardous combustion products: carbon monoxide, carbon dioxide.

SECTION 11 - TOXICOLOGICAL INFORMATION

There is no lethal dose information available.

Inhalation: Inhalation of vapours can cause irritation of the respiratory tract. High concentrations of oils, mists or vapours can cause chemical pneumonitis.

Skin: May cause irritation, drying and cracking.

Eyes: Cause irritation.

Ingestion: May cause irritation in mouth and stomach, thirst, nausea, vomiting, diarrhoea, with possible collapse if large amounts ingested. Aspiration of material upon vomiting may cause chemical pneumonitis.

SECTION 12 - ECOLOGICAL INFORMATION

No ecological information is available at present.

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SECTION 13 - DISPOSAL CONSIDERATIONS

Comply with all local and national regulations regarding disposal.

SECTION 14 - TRANSPORT INFORMATION

UN Number : Not regulated

IATA Class : Not regulated, Packing Group: Not regulated

IMDG Class : Not regulated, Packing Group: Not regulated

Not considered hazardous for transport purpose.

SECTION 15 - REGULATORY INFORMATION

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SECTION 16 - OTHER INFORMATION

R-phrases: -

S-phrases: -

**The highly refined mineral oil used in this product contains less than 3% DMSO extract as measured by IP 346.

Remarks: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use.