



*The Ultimate Lubricant*

# 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.

## **MULTITUDE OF MAINTENANCE**

### **USES:**

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

## **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.

## **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!

## **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	TEST RESULT		
		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
Viscosity, cSt @ 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

\* MoS<sub>2</sub> contribution 0.9