



ZetaLube

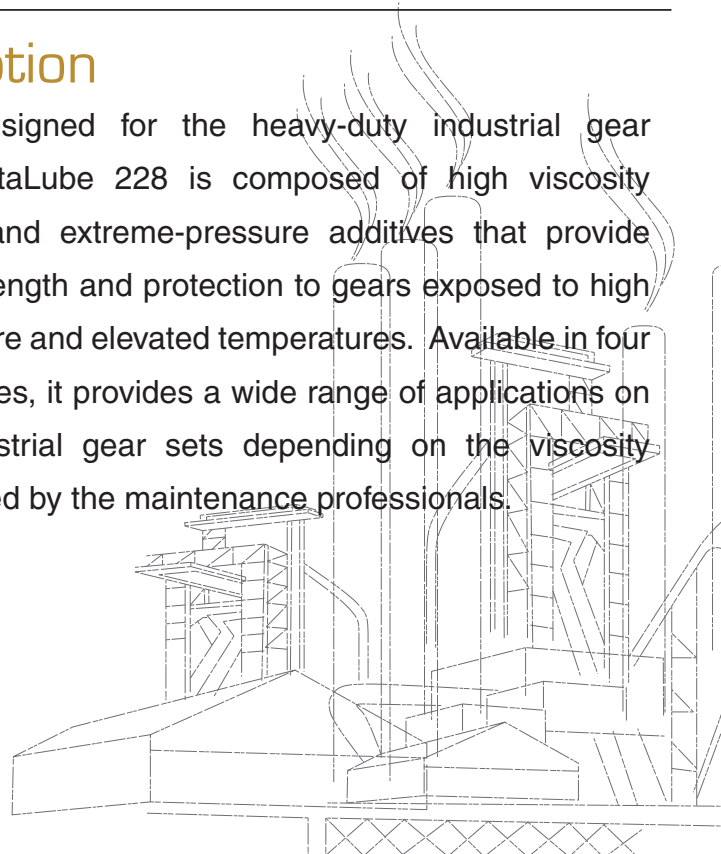
A New Lubricity Dimension
Evolved From Experience



ZetaLube 228 Extreme Pressure Gear Oil

Description

Specially designed for the heavy-duty industrial gear systems, ZetaLube 228 is composed of high viscosity mineral oil and extreme-pressure additives that provide extra film strength and protection to gears exposed to high load / pressure and elevated temperatures. Available in four ISO VG grades, it provides a wide range of applications on various industrial gear sets depending on the viscosity grade required by the maintenance professionals.



MAGNA INDUSTRIAL CO. LIMITED
Total Quality Maintenance

www.magnagroup.com

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Features and Benefits

- Provides excellent film strength to resist friction and wear – protects gear sets from mal-functioning or misalignment due to metal-to-metal frictional wears and reduces numbers of unexpected downtime.
- Excellent oxidation stability and corrosion protection to prevent gear systems from unscheduled breakdown due to excessive carbon deposits and corrosive wears.
- Carefully balanced and calculated proportion of foam suppressant to prevent gear action from aerating.
- Up to four different viscosity grades available for applications on a wide variety of gear sets.

Recommended Applications

- For lubrication of all types of industrial gears such as spur gears, helical gears, straight & spiral bevel gears, etc.
- For gear systems demanding the following requirements:
 - US steel
 - AGMA 250.04
 - DIN 51517
 - David Brown DB S1.53.101
 - Cincinnati Milacron
- Also suitable for gearbox containing bronze and copper alloy components.

Typical Data

| TEST | ASTM TEST METHOD | ISO VG 150 | ISO VG 220 | ISO VG 320 | ISO VG 460 |
|---|------------------|------------|------------|------------|------------|
| Density, kg/L @ 15°C | D-1298 | 0.891 | 0.898 | 0.901 | 0.908 |
| Viscosity, cSt @ 40°C @ 100°C | D-445 | 150 | 220 | 320 | 460 |
| | D-445 | 14.8 | 19 | 24.1 | 30 |
| Viscosity Index | D-2270 | 98 | 97 | 96 | 96 |
| Flash Point, COC, C(°F) | D-92 | 265(509) | 267(512) | 273(523) | 274(525) |
| Pour Point C(°F) | D-97 | -10(14) | -9(16) | -9(16) | -6(21) |
| Copper Strip Corrosion 3 hours @ 100°C | D-130 | 1b | 1b | 1b | 1b |
| Foaming Characteristics All Sequences, After Settling | D-892 | Nil | Nil | Nil | Nil |

The data shown are typical value and may vary.

Pack-size

205 Litre Metal Drum & 20 Litre Plastic Container

Authorized Distributor

Alshawi Trading,
Block 351, Road 51, Bldg 20, Manama - Bahrain.
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MATERIAL SAFETY DATA SHEET

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910. 1200, Standard must be consulted for specific requirements.

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| | |
|--|-----------------------------------|
| IDENTITY (As Used on Label and List) ZETALUBE 228 | LAST ASSESSED: 29 May 2007 |
|--|-----------------------------------|

SECTION I - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

| <i>Hazardous Components (Specific Chemical Identity: Common Name(s))</i> | <i>CAS NO.</i> | <i>ACGIH TLV</i> | <i>Other Limits Recommended</i> |
|--|----------------|----------------------|-------------------------------------|
| Highly refined mineral oil** | 64742-65-0 | 5mg/m ³ * | - |
| Highly refined mineral oil** | 64742-62-7 | 5mg/m ³ * | - |

SECTION II - PHYSICAL CHARACTERISTICS

| | | | |
|-------------------------------------|------|--|-------|
| <i>Boiling Point</i> | N.A. | <i>Specific Gravity (H₂O = 1)</i> | ~0.90 |
| <i>Vapor Pressure (@25°C, mmHg)</i> | N.A. | <i>Melting Point</i> | N.A. |
| <i>Vapor Density (AIR = 1)</i> | N.A. | <i>Evaporation Rate (Ether = 1)</i> | N.A. |

Solubility in Water < 0.1 g/l

Appearance and Odor Amber liquid with mild odour

SECTION III - FIRE AND EXPLOSION HAZARD DATA

| | | | |
|--|---------------------------------|-----------------|-----------------|
| <i>Flash Point (Method Used)</i> >150°C | <i>Flammable Limits</i> N.A. | <i>LEL</i> - | <i>UEL</i> - |
|--|---------------------------------|-----------------|-----------------|

Extinguishing Media

Dry chemical, water fog, carbon dioxide, foam, and sand.

Special Fire Fighting Procedures

Fire fighters should wear an approved self-contained breathing apparatus.

Unusual Fire and Explosion Hazards

None expected.

SECTION IV - REACTIVITY DATA

| | |
|----------------------------|------------------------------------|
| <i>Stability</i> Stable | <i>Conditions to Avoid</i> None |
|----------------------------|------------------------------------|

Incompatibility (Materials to Avoid)

Strong oxidizing agents

Hazardous Decomposition or Products

Oxides of carbon

| | |
|---|-----------------------------------|
| <i>Hazardous Polymerization</i> Will Not Occur | <i>Condition to Avoid</i> None |
|---|-----------------------------------|

SECTION V - HEALTH HAZARD DATA

Threshold Limit Value

See section I hazardous ingredients

Effects of Overexposure

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.

Emergency & First Aid Procedures

Eyes: Flush with large amounts of water for at least 15 min. Call a physician immediately.

Skin contact: Wash thoroughly with soap and water.

Inhalation: N.A.

If swallowed: Call a physician immediately.

SECTION VI - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken In Case Material Is Released or Spilt

Transfer bulk of material into another container. Absorb remaining residue with proper absorbents such as sand, earth, and vermiculite. Sweep up and dispose of as solid waste comply with all local and national regulations.

Waste Disposal Method

By methods consistent with local and national regulations.

Precautions to Be Taken in Handling and Storing

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

Other Precautions

Keep out of the reach of children.

SECTION VII - CONTROL MEASURES

Respiratory Protection (Specify Type)

None required

| | | |
|--------------------------|---|---|
| Ventilation | Local Exhaust | Special |
| | N.A. | N.A. |
| | Mechanical (General) | Other |
| | N.A. | N.A. |
| Protective Gloves | Rubber or plastic oil resistant gloves. | Eye Protection |
| | | Safety goggles and full-face shield when handled hot. |

Other Protective Clothing or Equipment

None required

Work/Hygienic Practices

N.A.

Remarks

* The ACGIH TLV for mineral oil mists is 5mg/m³ for a daily 8-hour exposure.
** Contains less than 3% DMSO extract as measured by IP346.

Transportation: Not classified.

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