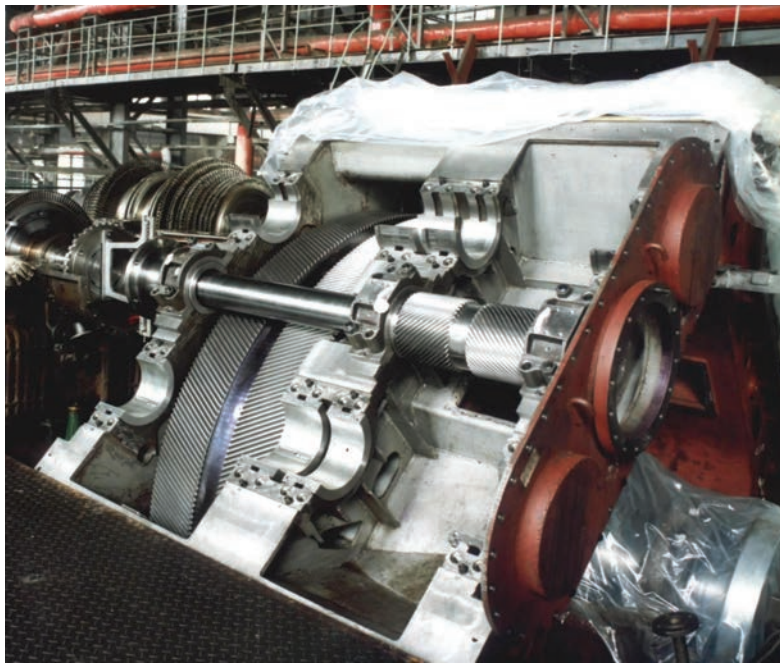
ZetaLube™

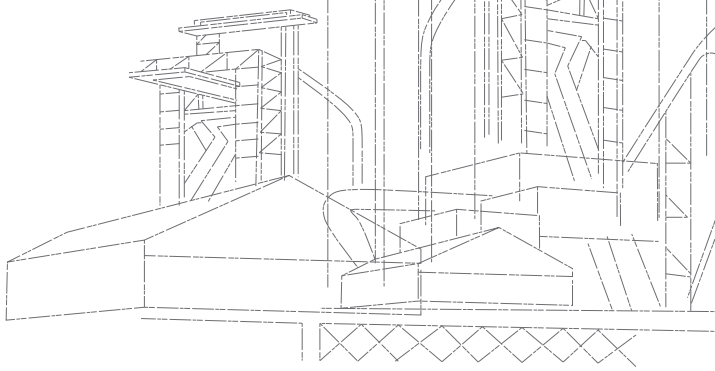
A New Lubricity Dimension
Evolved From Experience



ZetaLube 223 Turbine Oil

Description

Unlike many other so-called turbine oils, ZetaLube 223 is specifically designed to provide effective day-to-day lubrication for turbines operating continuously under harsh conditions. It is fortified with package of additives engineered for the applications on both gas and steam turbine demanding protection against wear, moisture, high loads, elevated temperatures, etc.



MAGNA INDUSTRIAL CO. LIMITED
Total Quality Maintenance

www.magnagroup.com

ZetaLube™

223 Turbine Oil

Features and Benefits

- Good thermal and oxidation stabilities - eliminates build-up of sludge and varnish which are detrimental to the performance of turbine engine.
- Excellent wear protection even at high temperatures to which most turbine engines are exposed.
- Fortified with anti-corrosion and anti-foam additives to provide necessary protection to the turbines operating in humid and harsh conditions.
- Offers outstanding film protection and strength to turbines bearing high loads.
- Provides reliable and clean lubrication to reduce maintenance costs and more importantly to eliminate unplanned downtime.

Recommended Applications

- For lubrication of steam and gas turbines requiring ISO VG 68 or ISO VG 100 turbine oils.
- Can also be applied to lubricate compressors and pumps.
- General non-EP plant lubrication

Typical Data

TEST	ISO VG 68	ISO VG 100
Appearance	Amber	Amber
Density, kg/L @ 20°C	0.871	0.875
Viscosity, cSt @ 40°C	68	100
Flash Point (Open Cup), °C	>230	>230
Pour Point, °C	-11	-10
Oxidation Characteristics – Hours to TAN 2.0	1500	1500
Copper Strip Test, 100°C, 3 hours	1b	1b

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.
www.alshawitrading.com
info@alshawitrading.com
P.O. Box : 33526

Tel: (973) 1755 0019
Fax: (973) 1755 5108

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.

ZETALUBE DIVISION
MAGNA INDUSTRIAL CO. LIMITED
18/F., GUARDIAN HOUSE,
32 OI KWAN ROAD, WANCHAI,
HONG KONG

TEL: (852) 2577 5187
FAX: (852) 2577 3190

IDENTITY (*As Used on Label and List*)	**LAST ASSESSED:** 29 May 2007
ZETALUBE 223	

SECTION I - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

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

SECTION II - PHYSICAL CHARACTERISTICS

Boiling Point	N.A.	***Specific Gravity (H_20 = 1)***	~0.9
Vapor Pressure (@25°C, mmHg)	N.A.	***Melting Point***	N.A.
Vapor Density (AIR = 1)	N.A.	***Evaporation Rate (Ether = 1)***	N.A.

Solubility in Water Negligible

Appearance and Odor Amber liquid with negligible odor.

SECTION III - FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	*Flammable Limits*	*LEL*	*UEL*
>230°C	N.A.	-	-

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. Autoignition temperature is in excess of 450°C.

SECTION IV - REACTIVITY DATA

Stability	*Conditions to Avoid*
Stable	None

Incompatibility (Materials to Avoid)

Strong oxidizing agents, hydrogen peroxide, chromic acid, bromine.

Hazardous Decomposition or Products

Incomplete combustion and high temperature thermal decomposition may promote oxides of carbon, sulfur and phosphorus.

Hazardous Polymerization	*Condition to Avoid*
Will Not Occur	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	***Eye Protection***
Rubber or plastic oil resistant gloves.	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/m^3 for a daily 8-hour exposure.

Transportation: Not classified.

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 or any loss, damage, or expense, direct or consequential, arising out of their use.