trade name: Transformer Oil BSI

product code: 520602

supplier: Caltex (Dubai) Alkhalij
EPPCO House
Al Qutaeyat Road
Dubai
(United Arab Emirates)

routine inquiry: +971-4-337-3220

fax: +971-4-337-9262

chemical description: Transformer Oil

<table>
<thead>
<tr>
<th>components</th>
<th>cas no.</th>
<th>range in %</th>
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<tbody>
<tr>
<td>Hydrotreated light naphthenic distillate</td>
<td>64742536</td>
<td>100</td>
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warning statements: LOW VISCOSITY PETROLEUM MIXTURE. CAN CAUSE LUNG INJURY IF INGESTED OR ASPIRATED. KEEP OUT OF REACH OF CHILDREN.

eyes: Expected to cause no more than minor eye irritation characterized by tearing or a burning sensation.

oral: If more than several mouthfuls are swallowed, abdominal discomfort, nausea, and diarrhea may occur.

Ingestion of this product and subsequent vomiting can
result in aspiration into the lungs, causing chemical pneumonia and lung damage.

inhalation: Breathing the vapour or mist at concentrations in air that exceed the ACGIH TLV, or in unusually high concentrations, as from exposure in poorly ventilated areas or confined spaces, may be irritating to the nose, throat and respiratory tract. Other symptoms of overexposure may include headache, nausea, dizziness and/or drowsiness.

skin: Expected to cause no more than minor skin irritation.

Prolonged or frequently repeated contact may cause more severe irritation or may cause the skin to become cracked or dry from the defatting action of this material.

long term toxic effects: Repeated excessive exposures to oil mists may cause respiratory damage and a condition resembling pneumonia.

The base oil component(s) are not expected to be carcinogenic based on IARC criteria. This product has not been tested as a whole for chronic health effects.

See Section 11 for additional information.

eyes: Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open.

If irritation persists, see a doctor.

skin: Remove and launder contaminated clothing, including shoes. Wash skin thoroughly with soap and water. See a doctor if any signs or symptoms described in this MSDS occur.

ingestion: If swallowed and person is conscious, give water or milk. DO NOT make person vomit except on advice of medical personnel. If advice cannot be obtained, take person with container and
label to nearest emergency treatment center. Never give anything by mouth to an unconscious person.

Do not induce vomiting. Aspiration of the material can cause serious lung injury such as chemical pneumonia. Call a doctor immediately. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person.

**inhalation:**
If respiratory irritation or any signs or symptoms as described in this MSDS occur, move the person to fresh air. If any of these effects continue, see a doctor.

**advice to doctor:**
This product may present an aspiration hazard. See related comments in this MSDS. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

**ignition temp. (degrees c):**
Not Determined

**flammable limits (% by volume):**
Not Determined

**flash point (degrees c):**
> 140 (PMCC)

**fire extinguishing agents:**
According to the U.S. National Fire Protection Association Guide, use water fog, dry chemical, foam, or carbon dioxide. Water or foam may cause frothing. Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapours and to provide protection for persons attempting
to stop the leak.

**explosion hazards:**

For fires involving this material, do not enter any enclosed or confined space without self-contained breathing apparatus to protect against the hazardous effects of combustion products or oxygen deficiency.

**in case of spill:**

Stop the source of the leak or release and contain spill if possible. Ventilate area. Use respirator and protective clothing as discussed in this MSDS. Cover spill with a generous amount of inert absorbent. Use a stiff broom to mix thoroughly. Sweep up and place in a disposable container. Scrub contaminated area with detergent and water using a stiff broom. Pick up liquid with additional absorbent and place in a disposable container. Prevent contamination of groundwater or surface water.

Minimum feasible handling temperatures should be maintained. Periods of exposure to high temperatures should be minimised. Water contamination should be avoided.

Empty containers retain residue (liquid and/or vapour) and can be dangerous. **DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION: THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.** Do not attempt to clean since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

**eyes:**

Safety glasses, chemical type goggles, or face shield appropriate where splashing or misting is expected during routine operations or spill clean-up.
skin: Avoid contact with skin or street clothing. Skin contact can be minimised by wearing protective clothing including coveralls, gloves, and boots. Gloves and boots should be resistant to chemicals and petroleum distillates.

Exposed employees should exercise reasonable personal cleanliness; this includes cleansing exposed skin several times daily with soap and water, and laundering or dry cleaning soiled work clothing at least weekly.

inhalation: Respiratory protection is normally not required. However, if operating conditions create airborne concentrations that are excessive and may exceed the recommended exposure standard(s), the use of an approved respirator is recommended.

Wear approved respiratory protection such as a toxic dust, mist and fume respirator.

ventilation: No special ventilation is usually necessary. However, if operating conditions create high airborne concentrations of this material, engineering controls may be needed. Local exhaust ventilation and/or enclosure of the process is preferred in these cases.

exposure limits: The ACGIH TLV for mineral oil mists is 5 mg/m3 for a daily 8-hour exposure. A short term exposure limit (STEL) of 10 mg/m3 is recommended.

note: The following data may represent a range of approximate or typical values for products in the same family. Precise technical information is provided in Product Bulletins and can be obtained from your Marketing Representative.

appearance & odor: Colorless liquid; petroleum odor

boiling point (deg. c): > 250

evapor pr. (mmhg @ 25 deg. c): Not Determined

density (kg/l at 15 deg. c): 0.895
vapor density (air = 1): Not Determined

ph of undiluted product: Not Applicable

solubility (water): Negligible

percent volatile by volume: Not Determined

evaporation: Not Determined

viscosity (all product grades): 13 mm2/s @ 40 deg. C

hazardous polymerizations: DO NOT OCCUR

products of combustion: Carbon monoxide, carbon dioxide, and aldehydes and ketones may be formed.

conditions to avoid: Heat, Strong Oxidizers

general: This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, hydrocracking and hydrotreating. These oils have not been listed in the U.S. National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as carcinogenic or probably carcinogenic to humans.

Some low viscosity naphthenic oils have caused skin irritation and skin tumours in laboratory animals when repeatedly applied and left in place between applications. The significance of this effect to humans has not been established. Brief or intermittent contact is not expected to cause adverse effects if it is washed thoroughly. Avoid prolonged or repeated skin contact.

environmental effects: This material may present environmental risks common to oil spills.

This product or a component(s) is expected to be resistant to biodegradation.

This product is expected to have low aquatic toxicity (LD50 > 1000 mg/l) and is not considered to represent a long-
term danger to the aquatic environment.

**waste disposal:** Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material.

**remarks:** This material may present environmental risks common to oil spills. Contact your local oil spill response group and applicable government agencies if a spill occurs.

**transport of dangerous goods:**

- **UN Number:** Not Applicable
- **Dangerous Goods Class:** Not Applicable
- **Proper Shipping Name:** Not Applicable
- **Hazchem Code (Australia/NZ):** Not Applicable
- **Additional Information:** Not Regulated.

**respirator information:** Where local approval authority is absent, respirator users can refer to U.S. NIOSH, European Standard EU-149, or joint Australia-New Zealand AS/NZS 1715/1716 for guidance.

Respirator users in Australia and New Zealand should comply with AS/NZS 1715/1716.

This product, as manufactured, does not contain polychlorinated biphenyls (PCB's) as per ASTM D 4059.

To the best of our knowledge, the information provided in this MSDS document is correct. Access to this information is being provided via the Internet so that it can be made available to as many potential users as possible. We do not assume any liability for consequences of the use of this information since it may be applied under conditions beyond our control or knowledge. Also, it is possible that additional data could be made available after this MSDS was issued. Certain hazards are described herein, however these may not be the only hazards that exist. All materials may present unknown hazards and should be used with caution. Customers are encouraged to review this information, follow precautions, and comply with all applicable laws and regulations regarding the use and disposal of this product. For specific technical data or advice concerning this product as supplied in your country please contact your local sales representative. The final determination of the suitability of any material is the sole responsibility of the user.

Approved HES Services    Revision Date: Nov-26-2002