



MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product name	MAK HIVOLTOL
Product type	Transformer Oil
Product Supplier	Bharat Petroleum Corporation Limited, 4 & 6, Currimbhoy Road, Ballard Estate, Mumbai – 400 001, Maharashtra India.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Preparation description	Blend of highly refined mineral oils and Performance additives.
A. Highly Refined Base Oils.	99 – 99.95 % wt.
B. Additives	0.05 – 1.0 % wt.

The chemical composition of the additive used in finished oil is confidential in nature and the details are not disclosed. However, the composition details will be provided to medical staff in case of emergency.

3. HAZARDS IDENTIFICATION

Human health hazards	No specific hazards under normal use conditions. Exposure limit for oil mist applies. Prolonged or repeated exposure may give rise to dermatitis.
Safety hazards	Not classified as flammable, but will burn.
Environmental hazards	Not readily biodegradable. Expected to have a high potential to bioaccumulate.
Other information	Not classified as dangerous for supply or conveyance.

4. FIRST AID MEASURES

Symptoms and effects	Not expected to give rise to an acute hazard under normal conditions of use
First Aid – Inhalation	At ambient / normal handling temperatures, inhalation of vapours is normally not a problem. In the event of dizziness or nausea, remove casualty to fresh air. If symptoms persist, obtain medical attention.
First Aid – Skin	Remove contaminated clothing and wash affected skin with soap and water. If persistent irritation occurs, obtain medical attention. If high pressure injection injuries occur, obtain medical attention immediately.
First Aid – Eye	Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

First Aid - Ingestion	Wash out mouth with water and obtain medical attention. DO NOT INDUCE VOMITING.
Advice to physicians	Treat symptomatically, Aspiration into the lungs may result in chemical pneumonitis. Dermatitis may result from prolonged or repeated exposure.

5. FIRE FIGHTING MEASURES

Specific hazards	Combustion is likely to give rise to a complex mixture of airborne solid and liquid particulate and gases, including carbon monoxide, oxides of sulphur, and unidentified organic and inorganic compounds.
Extinguishing media	Foam and dry chemical powder, Carbon dioxide, sand and earth. Water can be used to cool and protect exposed material.
Unsuitable extinguishing media	Never use a water jet. Use of Halon extinguishers should be avoided for environmental reasons.
Protective equipment	Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Use adequate ventilation & avoid contact with skin and eyes.
Personal protection	Wear impermeable gloves, boots and safety glasses.
Environmental precautions	Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers. Inform local authorities if this cannot be prevented.
Clean-up methods – small spillage	Absorb liquid with sand or earth, Sweep up and remove to a suitable, clearly marked container for disposal in accordance with local regulations.
Clean-up methods – large spillage	Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Dispose of as for small spills.

7. HANDLING AND STORAGE

Handling	Carry out a health risk assessment to determine safe handling procedures and equipment that are necessary to avoid contact and that are appropriate to the job. Prevent spillage.
storage	Store in a cool, dry, well-ventilated place. Use properly labeled and closable containers. Avoid direct sunlight, heat sources, and strong oxidizing agents.
Storage temperature	0 °C minimum to 50 °C maximum
Recommended materials	Use mild steel or high density polyethylene (HDPE) for containers or container linings.
Unsuitable materials	Avoid PVC for containers or container linings.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering control measures	Carry out a health risk assessment to determine safe operating procedures to avoid contact and exposure. Apply engineering controls appropriate to the job.
Hygiene measures	Wash hands before eating, drinking, smoking and using the toilet.
Respiratory protection	Carry out a health risk assessment to determine personal protection equipment that is necessary to avoid contact and exposure and that is appropriate to the job.
Hand protection	Wear PVC or nitrile rubber gloves.
Eye protection	Wear safety glasses or full face shield if splashes are likely to occur.
Body protection	Minimise all forms of skin contact, Wear overalls to minimise contamination of personal clothing. Launder overalls and undergarments regularly.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid at ambient temperature.
Colour	Colourless
odour	Characteristic mineral oil
Initial boiling point	Expected to be above 280 °C.
Vapour pressure	Expected to be less than 0.5 Pa at 20 °C
Density (Typical)	0.8200 g/ml at 29.5 °C
Vapour density (air = 1)	Greater than 1
Kinematic Viscosity at 40 °C, cSt	8.0
Flash point, °C (PMCC)	154
Flammability limit - lower	1 % v/v
Flammability limit - upper	10 % v/v
Auto-ignition temperature	Expected to be above 320 °C
Solubility in water	Negligible

10. STABILITY/REACTIVITY

Stability	Stable
Conditions to avoid	Extremes of temperature and direct sunlight
Materials to avoid	Strong oxidizing agents
Hazardous decomposition products	Hazardous decomposition products are not expected to form during normal storage.

11 TOXICOLOGICAL INFORMATION

Acute toxicity - Inhalation	Not considered to be inhalation hazard under normal conditions of use.
Eye Irritation	Expected to be slightly irritant
Skin irritation	Expected to be slightly irritant
Respiratory Irritation	If mists are inhaled, slight irritation of the respiratory tract may occur
Skin Sensitization	Not expected to be a skin sensitizer

12. ECOLOGICAL INFORMATION

Basis of assessment	Ecotoxicological data have not been determined specifically for this product. Information given is based on knowledge of the components and the ecotoxicology of similar products.
Mobility	Liquid under most environmental conditions. Floats on water, if it enters soil, it will absorb to soil particles and will not be mobile.
Persistence/degradability	Not readily biodegradable. Major constituents are expected to inherently biodegradable, but the product contains components that may persist in the environment.
Bioaccumulation	Has the potential to bioaccumulate

13. DISPOSAL CONSIDERATIONS

Waste disposal	Used or waste oil should disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the contractor to deal satisfactorily with used oil should be established beforehand.
Product disposal	As for waste disposal.
Container disposal	200 litre drums should be drained and returned to the supplies or sent to a drum reconditioner without removing or defacing marking or labels.

14. TRANSPORT INFORMATION

Not dangerous for conveyance under UN, IMO, ADR/RID and IATA/ICAO codes.

15. REGULATORY INFORMATION**EC Classification**

Not classified as dangerous under EC criteria

16. OTHER INFORMATION**Compiled By**

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