



MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

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| Product name | MAK SPIROL HD 90 |
| Product type | Gear Oil - Mineral Oil based |
| Product Supplier | Bharat Petroleum Corporation Limited, 4 & 6, Currimbhoy Road, Ballard Estate, Mumbai – 400 001, Maharashtra India. |

2. COMPOSITION/INFORMATION ON INGREDIENTS

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| Preparation description | Blend of highly refined mineral oils and Performance additives. |
| A. Highly Refined Base Oils. | 90 - 95 % wt. |
| B. Additives containing , antioxidant, antifoam & extreme pressure agents. | 5 - 10 % 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

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| 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

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| 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. |

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| 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. |
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| 5. FIRE FIGHTING MEASURES | |
| Specific hazards | Combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates 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 may be used for small fires only. |
| 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. |
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| 6. ACCIDENTAL RELEASE MEASURES | |
| Personal precautions | Avoid contact with skin and eyes. |
| Personal protection | Wear impermeable gloves and boots. |
| 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. |
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| 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 spillages. |
| 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. |
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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| 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

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| Physical state | Liquid at ambient temperature. |
| Colour | Amber |
| 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 (Average) | 0.9060 g/ml at 15 °C |
| Vapour density (air = 1) | Greater than 1 |
| Pour point | -9 °C |
| Kinematic Viscosity at 100°C, cSt | 13.5 to 24.00. |
| Kinematic Viscosity at 40 °C, cSt | 171.00 (Typical) |
| Flash point, °C (COC) | 180 min. |
| 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

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| 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

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| 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 |
| Other information | Prolonged and / or repeated contact with other products containing mineral oils can result in defatting of the skin, particularly at elevated temperatures. This can lead to irritation and possibly dermatitis, especially under conditions of poor personal hygiene. Skin contact should be minimised |

12. ECOLOGICAL INFORMATION

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| 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

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| Waste disposal | Used or waste oil should be recycled or 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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