

MANNOL[®] MATERIAL SAFETY DATA SHEET

Prepared according to Annex II of EC Regulation 1907/2006

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: LHM + fluid

Product Use: Steering Hydraulic - Motor oil

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Company Information: Sudheimer Car Technik Vertriebs GmbH

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2. HAZARDS IDENTIFICATION

Principal Hazards: If the product comes in contact with skin, eyes flush immediately with plenty of water. In case of swallowing please contact the physician.

Labelling: --

Dangerous compounds: see chapter 3; R-sentence descriptions, see chapter 16.

Additional advices / hints: Please advise the personal stuff of the a.m. product components.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients: (in acc. to Dangerous Preparation Directive 1999/45/EC)

CAS No.	Name	Weight %	Symbols/Risk Phrases
204-884 / 270-485	Zn-free P-/ S-package	<1,5	N; Xi; R51/53; R36/37/38

4. FIRST AID MEASURES

Ingestion: DO NOT INDUCE VOMITING. If conscious, give 2 glasses of water. Get immediate medical attention.

Eyes: Flush immediately with water for at least 15 minutes. Get immediate medical attention.

Skin: Wash with soap and water. Remove contaminated clothing. Get medical attention of irritation develops. Launder contaminated clothing before reuse.

Inhalation: Remove exposed person to fresh air if adverse effects are observed.

5. FIRE FIGHTING MEASURES

Flash Point: >100°C COC (Typical)

Extinguishing Media: CO₂, dry chemical, or foam. Water can be used to cool and protect exposed material.

Firefighting Procedures: Recommend wearing self-contained breathing apparatus. Water may cause splattering.

Unusual Fire & Explosion Hazards: Toxic fumes, gases (H₂S, CO, CO₂, NO_x, SO_x etc.) or vapors may evolve on burning.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and water-ways.

Pick up free liquid for recycle/ disposal. Residual liquid can be absorbed on inert material. Check under Transportation and Labelling (DOT/CERCLA) and Other Regulatory Information Section (SARA) for hazardous Substances to determine regulatory reporting requirement for spills.

7. HANDLING AND STORAGE

Loading Temperature: Not determined.

Maximum Handling: Max. 60°C.

Temperature Handling Procedure: Keep containers closed when not in use. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product.

Maximum Storage Temperature: Not determined.

Storage Procedures: No special storage precautions required.

Handling Procedures: Safety glasses and gloves are recommended. Avoid contact with skin or eyes.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Limits

Other Exposure Limits: Under decomposition temperature H₂S may be generated. Under these conditions which may generate H₂S, observe the ACGIH STEL of 14mg/m³ (10ml/m³).

Ventilation Procedures: Use local exhaust ventilation to control mists or vapors.

Hand Protection: Nitrile rubber.

Eye Protection: Chemical goggles or faceshield.

Respiratory Protection: Use full face respirator with a combination organic vapor and dust/ mist cartridge if the recommended exposure limit is exceeded.

Clothing recommendation: A long sleeve shirt is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Green-flourescent coloured liquid
Smell:	Characteristical
Flash Point:	>100°C COC
Upper Flammable Limit:	Not determined.
Lower Flammable Limit:	Not determined.
Autoignition Point:	Not determined.
Explosion Data:	Material does not have explosive properties.
Vapour Pressure:	Not Determined.
pH:	Not determined.
Specific Gravity:	Approx. 0.86 g/cm ³ (@15.6°C) typi cally
Water Solubility:	Insoluble.
Evaporation Rate:	Not determined.
Viscosity:	ISO VG 14-23 (@40°C), typically
Odour Threshold:	Unknown.
Boiling Point:	Not determined.
Pour Point Temperature:	Max. -51°

10. STABILITY AND REACTIVITY

Stability: Material is normally stable at moderately elevated temperatures and pressures.

Decomposition Temperature: Toxic fumes may occure at temperatures above 65°C.

Incompatibility: Oxidizing agents, Halogens and halogenated compounds.

Polymerization: Will not occur.

Thermal Decomposition: Smoke, carbon monoxide, carbon dioxide, aldehydes and other products ofincomplete combustion. Oxides of C-, N- or S- may occure.

11. TOXICOLOGICAL INFORMATION

Acuate Exposure-

Eye Irritation: Prolonged contact may lead to eye irritating, but the product is not a primary eye irritant.

Skin Irritation: Based on data from components or similar materials like other motor oils. Prolonged or repeated skin contact as from clothing wet with material may cause skin irritations and or allergic skin reactions like redness, edema, drying, and cracking of the skin.

Respiratoy Irritation: If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract similar to that observed with mineral oil. Based on data from components or similar materials. Under good industrial hygiene practises where all exposure limits are observed, respiratory irritation should not be problem.

Dermal Toxicity: No data available.

Inhalation Toxicity: No data available.

Oral: No data available.

Dermal Sensitization: No data available to indicate product or components may be a primary skin sensitizer. Therefore prolonged contact should be avoided.

Inhalation Sensitization: No data available to indicate product or components may be respiratory sensitizers.

Chronical Exposure-

Chronic Toxicity: No data available.

Carcinogenicity: This product is formulated with mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC.

All of the oils in this product have been demonstrated to contain <3% extractables by the IP 346 test.

Acute toxicity of the additive: Oral LD50 (rat): >5000 mg/kg

Dermal LD50 (rabbit): >2000 mg/kg

Inhalation LC50: No data available.

Mutagenicity: No data available.

Reproductive Toxicity: No data available.

Teratogenicity: No data available.

Other: No other health hazards known.

12. ECOLOGICAL INFORMATION-ENVIRONMENTAL TOXICITY

Freshwater Fish Toxicity: Not determined.

Freshwater Invertebrates Toxicity: Not determined.

Algae Toxicity: Not determined.

Saltwater Fish Toxicity: Not determined.

Saltwater Invertebrates Toxicity: Not determined.

Bacteria Toxicity: Not determined.

Miscellaneous Toxicity: Not determined.

ENVIRONMENTAL FATE -

Biodegradation: Laboratory studies indicate limited biodegradation with non- acclimated sludge, based on component data. Not readily biodegradable.

Bioaccumulation: Not determined.

Soil Mobility: Not determined.

WGK / WPC: Estimated: WGK 2 (WPC 2) acc. to german regulations.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: In accordance with European Law: No dangerous disposal.

14. TRANSPORT INFORMATION

ICAO/ IATA:	Not regulated.
IMDG (Ambient):	Not regulated.
IMDG (Elevated):	Not regulated.
IMDG EMS:	Not applicable.
IMDG MFAG:	Not applicable.
IMO Marine Bulk:	Not applicable.
ADR/ RID (Ambient):	Not regulated.
ADR/ RID (Elevated):	Not regulated.

15. REGULATORY INFORMATION

Label for supply: Not applicable
Risk phrases: Not applicable
Safety phrases: Not applicable

16. OTHER INFORMATION

Explanations of R-phrases in section 3:

R36/37/38 – Irritating to eyes, respiratory system and skin.

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.