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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Trade name or designation of the mixture LHM+

Registration number -

UFI: KJTW-X17S-U001-61FX

Synonyms None.

SDS number 24

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Hydraulic fluid.

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet**Manufacturer/Supplier**

Company name Federal-Mogul Global Aftermarket EMEA bv

Address: Prins Boudewijnlaan 5
B-2550 Kontich
Belgium

Contact person: Mario Garelli – Product Manager Braking Products EMEA
E-mail: mario.garelli@driv.com

Telephone: +39 045 8281 354

1.4. Emergency Telephone: INFOTRAC: 001-352-323-3500
Belgium Poison Center (Centre Antipoison): +32 070 245 245

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards
Aspiration hazard Category 1 H304 - May be fatal if swallowed and enters airways.

2.2. Label elements**Label according to Regulation (EC) No. 1272/2008 as amended**

Contains: Hydrocarbons, C13-C16, n-alkanes, isoalkanes, cyclics <0,03% aromatics, Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based

Hazard pictograms

Signal word Danger

Hazard statements
H304 May be fatal if swallowed and enters airways.

Precautionary statements

Prevention
P102 Keep out of reach of children.

Response
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTRE/doctor.
P331 Do NOT induce vomiting.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental information on the label

EUH208 - Contains (4-nonylphenoxy)acetic acid. May produce an allergic reaction.

2.3. Other hazards

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

The mixture does not contain any substances included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties at a concentration equal to or greater than 0.1% by weight.

The mixture does not contain any substances having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1% by weight.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	60 - 100	72623-86-0 276-737-9	-	649-482-00-X	
Classification: Asp. Tox. 1;H304					L
Hydrocarbons, C13-C16, n-alkanes, isoalkanes, cyclics <0.03% aromatics	10 - 30	1174522-45-2 934-954-2	-	-	
Classification: Asp. Tox. 1;H304					
(4-nonylphenoxy)acetic acid	< 1	3115-49-9 221-486-2	-	-	
Classification: Acute Tox. 4;H302;(ATE: 1674 mg/kg bw), Skin Corr. 1B;H314, Eye Dam. 1;H318, Skin Sens. 1A;H317, Aquatic Acute 1;H400(M=1), Aquatic Chronic 1;H410(M=1)					

List of abbreviations and symbols that may be used above

ATE: Acute toxicity estimate.

M: M-factor

Note L - The harmonized classification as a carcinogen does not apply because the substance contains less than 3 % DMSO extractable material as measured by IP 346.

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures**General information**

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures**Inhalation**

Move to fresh air. In case of persistent throat irritation or coughing or after inhalation of oil mist: Seek medical attention and bring along these instructions.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Call a physician or poison control centre immediately.

4.2. Most important symptoms and effects, both acute and delayed

Aspiration may cause pulmonary oedema and pneumonitis. Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure. Defats the skin. Exposed individuals may experience eye tearing, redness, and discomfort.

4.3. Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

SECTION 5: Firefighting measures**General fire hazards**

Will burn if involved in a fire.

5.1. Extinguishing media**Suitable extinguishing media**

Water spray, dry powder or carbon dioxide.

Unsuitable extinguishing media

Water jet.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Special fire fighting procedures

Use standard firefighting procedures and consider the hazards of other involved materials. Containers close to fire should be removed immediately or cooled with water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Follow standard emergency procedure. Avoid inhalation of oil mist and contact with skin and eyes. Avoid prolonged and repeated contact with oil, particularly used oil. Wear appropriate personal protective equipment (See Section 8).

For emergency responders

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Remove sources of ignition.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage with oil-absorbing material. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated area with oil-removing material.

Never return spills to original containers for re-use.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid inhalation of oil mist and contact with skin and eyes. Avoid prolonged and repeated contact with oil, particularly used oil. Always remove oil with soap and water or skin cleaning agent, never use organic solvents. Do not use oil-contaminated clothing or shoes, and do not put rags moistened with oil into pockets. Use work methods which minimise oil mist production. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. For personal protection, see Section 8 of the SDS. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Store between 15°C - 30°C. Store away from incompatible materials (see section 10 of the SDS).

Storage class (TRGS 510): 10 (Combustible liquids that cannot be assigned to any of the above storage classes)

7.3. Specific end use(s)

Hydraulic fluid.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (CAS 72623-86-0)	TWA	5 mg/m ³	Respirable fraction.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Not available.

Predicted no effect concentrations (PNECs)

Not available.

8.2. Exposure controls

Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
General information	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Eye/face protection	Risk of splashes: Wear approved safety goggles. Eye protection should meet standard EN 166.
Skin protection	
- Hand protection	Wear appropriate chemical resistant gloves. Full contact: Glove material: Nitrile. Use gloves with breakthrough time of > 480 minutes. Minimum glove thickness > 0.2 mm. Always wear chemical-resistant protective gloves that comply with EN 374 to handle this product. Observe good industrial hygiene practices and wash gloves with soap and water before removing them. Assess the working conditions and always consult your glove supplier for information on the most suitable type of glove for each task and the required material, thickness, and breakthrough time specifications. The use of type-B gloves in accordance with EN 374 is recommended as a minimum protection against intermittent or splash contact. Consult your supplier to find the most suitable option for the product in question. The requirements of EN 388 must be taken into account for applications involving mechanical hazards with the risk of abrasion or incision. The requirements outlined in EN 407 must be taken into consideration for tasks involving thermal hazards.
- Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	In case of inadequate ventilation or risk of inhalation of oil mist, suitable respiratory equipment with combination filter (type A2/P2) can be used. Respiratory protection should meet standard EN 14387.
Thermal hazards	When material is heated, wear gloves to protect against thermal burns.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
Environmental exposure controls	Environmental manager must be informed of all major releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Form	Liquid.
Colour	Green.
Odour	Characteristic.
Melting point/freezing point	< -50 °C (< -58 °F)
Boiling point or initial boiling point and boiling range	> 290 °C (> 554 °F)
Flammability	Will burn if involved in a fire.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	No relevant additional information available.
Explosive limit – upper (%)	No relevant additional information available.
Flash point	> 115 °C (> 239 °F)
Auto-ignition temperature	No relevant additional information available.
Decomposition temperature	No relevant additional information available.
pH	No relevant additional information available.
Kinematic viscosity	< 20,5 cSt (20 °C (68 °F))
Solubility	
Solubility (water)	Insoluble in water.
Partition coefficient (n-octanol/water) (log value)	No relevant additional information available.
Vapour pressure	0,1 kPa (20 °C (68 °F))
Density and/or relative density	
Density	> 0,835 - < 0,855 g/cm ³ (20 °C (68 °F))

Vapour density No relevant additional information available.

Particle characteristics Not applicable, material is a liquid.

9.2. Other information

9.2.1. Information with regard to physical hazard classes No relevant additional information available.

9.2.2. Other safety characteristics

Viscosity 19,1 cSt (40 °C (104 °F))

SECTION 10: Stability and reactivity

10.1. Reactivity The product is stable and non reactive under normal conditions of use, storage and transport.

10.2. Chemical stability Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions Will not occur.

10.4. Conditions to avoid Avoid exposure to high temperatures or direct sunlight. Contact with incompatible materials.

10.5. Incompatible materials Strong oxidizers, strong acids, and strong bases. Strong reducing agents.

10.6. Hazardous decomposition products None expected under normal conditions of use.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation Prolonged inhalation may be harmful. Inhalation of oil mist or vapours formed during heating of the product will irritate the respiratory system and provoke coughing.

Skin contact Prolonged and repeated contact with used oil may dry skin and cause redness. The harmful effects may increase in used oil.

Eye contact Direct contact with eyes may cause temporary irritation.

Ingestion Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms Aspiration may cause pulmonary oedema and pneumonitis. Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure. Defats the skin. Exposed individuals may experience eye tearing, redness, and discomfort.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity May be fatal if swallowed and enters airways.

Product	Species	Test Results
LHM+ (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 3000 mg/kg
Oral		
LD50	Rat	> 5000 mg/kg
Components	Species	Test Results

(4-nonylphenoxy)acetic acid (CAS 3115-49-9)

Acute

Oral

LD50 Rat 1674 mg/kg

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory sensitisation Based on available data, the classification criteria are not met.

Skin sensitisation The product contains a small amount of sensitising substance which may provoke an allergic reaction among sensitive individuals.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

IARC Monographs. Overall Evaluation of Carcinogenicity

Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (CAS 72623-86-0) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	May be fatal if swallowed and enters airways.
Mixture versus substance information	No information available.

11.2. Information on other hazards

Endocrine disrupting properties	This mixture does not contain any substances having endocrine disrupting properties with respect to human health as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.
Other information	Prolonged and repeated contact with used oil may cause serious skin diseases, such as dermatitis and skin cancer.

SECTION 12: Ecological information

12.1. Toxicity	Based on available data, the classification criteria are not met for hazardous to the aquatic environment.
12.2. Persistence and degradability	Expected to be inherently biodegradable.
12.3. Bioaccumulative potential	No data available for this product.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	The product is insoluble in water.
12.5. Results of PBT and vPvB assessment	This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.
12.6. Endocrine disrupting properties	This mixture does not contain any substances having endocrine disrupting properties with respect to the environment as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.
12.7. Other adverse effects	Oil spills are generally hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	13 01 13* The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number	Not regulated as dangerous goods.
14.2. UN proper shipping name	Not regulated as dangerous goods.
14.3. Transport hazard class(es)	
Class	Not assigned.
Subsidiary risk	-
Hazard No. (ADR)	Not assigned.
Tunnel restriction code	Not assigned.
14.4. Packing group	Not assigned.
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not assigned.

RID

- 14.1. UN number Not regulated as dangerous goods.
14.2. UN proper shipping name Not regulated as dangerous goods.
14.3. Transport hazard class(es)
Class Not assigned.
Subsidiary risk -
14.4. Packing group Not assigned.
14.5. Environmental hazards No.
14.6. Special precautions for user Not assigned.

ADN

- 14.1. UN number Not regulated as dangerous goods.
14.2. UN proper shipping name Not regulated as dangerous goods.
14.3. Transport hazard class(es)
Class Not assigned.
Subsidiary risk -
14.4. Packing group Not assigned.
14.5. Environmental hazards No.
14.6. Special precautions for user Not assigned.

IATA

- 14.1. UN number Not regulated as dangerous goods.
14.2. UN proper shipping name Not regulated as dangerous goods.
14.3. Transport hazard class(es)
Class Not assigned.
Subsidiary risk -
14.4. Packing group Not assigned.
14.5. Environmental hazards No.
14.6. Special precautions for user Not assigned.

IMDG

- 14.1. UN number Not regulated as dangerous goods.
14.2. UN proper shipping name Not regulated as dangerous goods.
14.3. Transport hazard class(es)
Class Not assigned.
Subsidiary risk -
14.4. Packing group Not assigned.
14.5. Environmental hazards
Marine pollutant No.
EmS Not assigned.
14.6. Special precautions for user Not assigned.
14.7. Maritime transport in bulk according to IMO instruments Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended
Not listed.
Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended
Not listed.
Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended
Not listed.
Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended
Not listed.
Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended
Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

National regulations

TA-LUFT

5.2.5 (Organic Substances)

Water hazard class

AwSV

WGK1

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
DNEL: Derived No-Effect Level.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
IMO: International Maritime Organization.
LD50: Lethal Dose, 50%.
PBT: Persistent, bioaccumulative and toxic.
PNEC: Predicted No-Effect Concentration.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
TWA: Time Weighted Average.
vPvB: Very persistent and very bioaccumulative.

References

HSDB® - Hazardous Substances Data Bank
ECHA: European Chemical Agency.
Registry of Toxic Effects of Chemical Substances (RTECS)

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements, which are not written out in full under sections 2 to 15

H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

This SDS contains revisions in the following section(s):

2, 3, 6, 7, 8, 11, 12, 16.

Training information

Follow training instructions when handling this material.

Disclaimer

The information provided on this data sheet was abstracted from supplier safety data sheets and standard references in occupational health and toxicology. Federal-Mogul makes no representation or warranty with respect to the information obtained from such references. The information is however, as of the date provided, true and accurate to the best of Federal-Mogul's knowledge, and should be used to make an independent determination of the methods to safeguard workers and the environment.