

SAFETY DATA SHEET

according to Regulation (EC) 1907/2006 (REACH), as amended by 2020/878/EU



DIFFU - THERM® Magnetic-Particle-Suspension MPS - F (Aerosol)

1. Identification of the substance/mixture and of the company/undertaking:

1.1. Product identifier

Trade name: Magnet-Particle-Suspension fluorescence (oil based)
Article number: MPS - F
UFI 4174-J01U-800R-8506

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

Application of the substance / the preparation

As Magnetic-Particle-Suspension at the Magnetic particle inspection
by acc. to EN ISO 9934-1 for finding surface cracks.

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier

Helmut Klumpf
Technische Chemie GmbH & Co. KG
Industriestr. 15
D - 45699 Herten Phone.: +49(0)2366 1003 - 0 E-mail: info@diffu-therm.de

1.4. Emergency telephone number: a.m. or next Emergency phone:

2. Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008			
Hazard class	Category	Hazard class and category	Hazard statement
Aerosol	Category 1	--	H222, H229

The full text of the hazard statements listed in this section can be found in section 16.

2.1. Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labeled according to the CLP regulation.



Hazard pictograms GHS02

Signal word Danger

Hazard statements

H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P271 Use only outdoors or in a well-ventilated area.
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

Supplemental hazard information

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

Danger of electrostatic charge. Product can become statically charged, which can lead to an ignitable electrical discharge. The material can release fumes that can quickly form flammable mixtures.
Vapours can form an explosive mixture with air.

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Not listed.

3. Composition/information on ingredients

Chemical characterization: Aerosol: Mixture of the substances that require labeling as shown in the table and other components that do not require labeling.

Components:	Name of chemical	weight %
CAS: 90622-58-5 EINECS: 920-901-0	aliphatic hydrocarbons, C11-C13, isoalkane, < 2% aromatic GHS08 Asp. Tox .1, EUH066, H304	30 - 80
CAS: 106-97-8 EINECS: 203-448-7	n-Butane GHS02 Flam. Gas 1, H220; GHS04	5 - 20

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CAS: 74-98-6 EINECS: 200-827-9	propane GHS02 Flam. Gas 1, H220; GHS04	5 - 20
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4. First aid measures

Description of first aid measures

General advice:

Remove from exposure, lie down. Take off all contaminated clothing immediately. If symptoms call a physician.

After inhalation

Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. If unconscious place in recovery position. Consult a physician after significant exposure.

After skin contact

Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.

After eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes. If eye irritation persists, consult a specialist.

After swallowing

Rinse mouth with water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If a person vomits when lying on his back, place him in the recovery position. Call a physician immediately.

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

Symptoms

acidosis, Control the alkaline reserve, Shortness of breath, Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. See Section 11 for more detailed information on health effects and symptoms.

Effects

Aspiration hazard if swallowed - can enter lungs and cause damage. Aspiration may cause pulmonary oedema and pneumonitis.

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

Treatment

Treat symptomatically. Later control for pneumonia and lung oedema. In case of shortness of breath, give oxygen. Artificial respiration and/or oxygen may be necessary.

If ingested, material may be aspirated into the lungs and cause chemical pneumonia. Treat appropriately.

5. Firefighting measures

5.1. Extinguishing media:

Suitable extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media:

High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting:

Highly flammable liquid and vapour. The vapour may be invisible, heavier than air and spread along ground. Vapours may form explosive mixtures with air. Flash back possible over considerable distance.

Hazardous combustion products: Carbon monoxide, Carbon dioxide (CO₂)

5.3. Advice for firefighters

In case of fire, wear self-contained breathing apparatus. Wear personal protective equipment.

Additional information's:

Cool containers at risk with water spray jet.

Danger for bursting of aerosols when heated for more than 50°C.

Aerosols that burst in fire can be mightily shot away.

separately. This must not be discharged into drains.

6. Accidental release measures

6.1. Personal precautions:

Keep away from heat and sources of ignition. Keep away unprotected persons. Use personal protective equipment. Provide adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours or spray mist.

6.2. Environmental precautions:

Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.

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6.3. Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information.
See Section 13 for information on disposal.

7. Handling and storage

7.1. Precautions for safe handling:

Advice on safe handling:

Ensure adequate ventilation. Use personal protective equipment.
Avoid contact with skin, eyes and clothing. Do not inhale vapours or spray mist.

Hygiene measures:

Keep away from food, drink and animal feed. Do not eat, drink or smoke in the area of application. Wash hands before breaks and at the end of work. Remove soiled clothing immediately.

7.2. Conditions for safe storage, including any incompatibilities:

Requirements for storage areas:

Store in a solvent-proof place in the original container. Store on a floor.

Advice on protection against fire and explosion:

Keep away from sources of ignition - Do not smoke. Vapours may be invisible, heavier than air and spread along the ground. Vapours may form explosive mixtures with air. Take measures against electrostatic charging. Use only in a place with explosion-proof equipment.

Further information on storage conditions:

Keep tightly closed in a dry and cool place. Keep away from direct sunlight. Keep in a well-ventilated place.

Advice on common storage:

Incompatible with oxidizing agents. Do not store together with oxidizing and self-igniting products. Keep away from food, drink and animal feeding stuffs.

German storage class: 2B Aerosols flammable

8. Exposure controls/personal protection

Additional advice on system design:

The necessary protection measures and the type of controls necessary will vary depending upon potential exposure conditions.

Control measures to: ensure that the load limits are not exceeded, should be provided for adequate ventilation. Explosion-proof ventilation equipment.

8.1. Control parameters

Components with critical values that require monitoring at the workplace:	
aliphatic hydrocarbons, C11-C13, Isoalkane, < 2% aromatics (30 - 80%)	
TRGS 900	KZW 600 mg/m ³ SMW 300 mg/m ³
106-97-8 butane (10 - 20%)	
WEL	2.400 mg/m ³ , 1.000 ml/m ³ ; 4(II); DFG
74-98-6 propane (10 - 20%)	
WEL	1.800 mg/m ³ , 1.000 ml/m ³ ; 4(II); DFG

Notes:

KZW short-term value (limit value for short-term exposure): limit value that should not be exceeded, based on a duration of 15 minutes (unless otherwise stated).

SMW shift average (limit value for long-term exposure): time-weighted average, measured or calculated for a reference period of eight hours (unless otherwise stated).

8.2. Exposure controls

Personal protective equipment

General protective and hygienic measures

Do not eat, drink or smoke while working.
The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Wash hands during breaks and at the end of the work.
Do not inhale gases / fumes / aerosols.

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Breathing equipment:

If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable.

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

Half-face filter respirator Type A.

Protection of hands:

suitable protective gloves.

The glove material has to be impermeable and resistant to the product.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Safety glasses. Tightly sealed safety glasses.

Body protection: Protective work clothing.

Limitation and supervision of exposure into the environment

Make sure, that the current environmental regulations comply with that limit to discharge into air, water and ground. To protect the environment, appropriate protective measures apply to limit or prevent emissions.

9. Physical and chemical properties

9.1. General Information

Form: Aerosol

Colour: colourless - clear/brown

Smell: weak, characteristic

Data relevant for safety:

(Product without power gas)

Boiling range:	188 - 210 °C
Flash point:	> 68 °C
Ignition temperature:	> 200 °C
Explosion limits	Lower e.l.: 0,6 Vol.%
	Upper e.l.: 6 Vol.%
Vapour pressure (20°C):	0,04 kPa
Density (20°C):	0,7 - 0,85 g/cm ³
Solubility in water (20°C):	Not determined.
Viscosity (25°C):	1,74 mm ² /s

9.2 Other information

The product is not explosive, but the formation of explosive vapor/air formation of explosive vapor/air mixtures is possible.

10. Stability and reactivity

10.1. Reactivity: This material is not reactive under normal ambient conditions.

10.2. Chemical stability: The material is stable under normal conditions.

10.3. Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.4. Possibility of hazardous reactions: Hazardous polymerization will not occur.

10.5. Conditions to avoid:

Avoid shock, friction, heat, sparks, open flame and other ignition sources. Prevent electrostatic charging.

10.6. Incompatible materials: oxidisers

10.7. Hazardous decomposition products:

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

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11. Toxicological information

11.1. Information on the hazard classes within the meaning of Regulation (EC) No. 1272/2008

The classification of risk is based on knowledge of the toxicity of the components contained in this product.

Acute toxicity: Is not classified as acutely toxic.

Exposure route	Endpoint	Value	Species	Method	Source	Notes
oral	LD0	> 5.000 mg/kg	rat	OECD-Guideline 401	ECHA	read-across
inhalation: dust/mist	LC0	≥ 5.600 mg/m ³ /4h	rat	OECD-Guideline 403	ECHA	read-across
dermal	LD0	> 2.300 mg/kg	rabbit	--	ECHA	read-across

Skin corrosion/irritation:

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Serious eye damage/eye irritation:

Shall not be classified as seriously damaging to the eye or eye irritant. (ECHA, OECD Guideline 405)

Respiratory or skin sensitisation Skin sensitisation:

Shall not be classified as a skin sensitizer. (ECHA, OECD Guideline 406)

Respiratory sensitisation:

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity:

Shall not be classified as germ cell mutagenic. (ECHA, OECD Guideline 471, OECD Guideline 478, OECD Guideline 479, OECD Guideline 476)

Carcinogenicity:

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity:

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure:

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure:

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard: May be fatal if swallowed and enters airways.

Other information: Repeated exposure may cause skin dryness or cracking.

11.2. Information on other hazards:

Endocrine disrupting properties: Not listed.

12. Ecological information

12.1. Toxicity

Aquatic toxicity (acute): Based on available data, the classification criteria are not met.

Endpoint	Exposure time	Value	Species	Method	Source	Notes
LL50	96 h	>1.000 mg/l	rainbow trout (Oncorhynchus mykiss)	OECD-Guideline 203	ECHA	read-across
LL50	48 h	>1.000 mg/l	Crustaceae: Chaetogammarus marinus	EPA OPPTS 850.1020	ECHA	read-across
EL50	48 h	>1.000 mg/l	Daphnia magna	OECD-Guideline 202	ECHA	read-across
EL50	72 h	>1.000 mg/l	algae (pseudokirchneriella subcapitata)	OECD-Guideline 201	ECHA	read-across

Aquatic toxicity (chronic)

Endpoint	Exposure time	Value	Species	Method	Source	Notes
NOELR	72 h	1.000 mg/l	algae (pseudokirchneriella subcapitata)	OECD-Guideline 201	ECHA	read-across

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Persistence and degradability

Biodegradation:

Process	Degradation rate	Time	Method	Source	Notes
oxygen depletion	89,8 %	28 d	OECD Guideline 301 F	ECHA	--

12.2. Persistence: No data available.

12.3. Bioaccumulative potential: n-octanol/water (log KOW)

12.4. Mobility in soil:

The Organic Carbon normalised adsorption coefficient $\geq 1.71 - \leq 5.95$ (ECHA)

12.5. Results of PBT and vPvB assessment:

According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6. Endocrine disrupting properties: Not listed.

12.7. Other adverse effects: Data are not available.

Remarks: Wassergefährdungsklasse, WGK (water hazard class): 1.

13. Disposal considerations

13.1. Waste treatment methods

- Product** : Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services. This product shall be disposed of or recovered in compliance with Directive 2008/98/EC on waste as lastly amended.
- Contaminated Packaging** : Container must be completely emptied and must not be opened by force. Hand over to authorized disposal agency. Dispose of it in accordance with local regulations.
- European Waste Catalogue Number** : EAV: 15 01 10
term: Iron-metal containers with a contaminated rest of the contents

14. Transport information

14.1. UN number or ID number

1950

14.2. UN proper shipping name

ADR DRUCKGASPACKUNGEN entzündbar
RID DRUCKGASPACKUNGEN entzündbar
IMDG Aerosols (Limited Quantities Only) (Package $\leq$ 30 kg)
ICAO-TI und IATA-DGR Aerosols, flammable

14.3. Transport hazard class(es)

ADR-Class : 2
shipment category : 2
(Labels; Classification Code; Hazard : 2.1; 5F; D
Identification Number; Tunnel restriction code)
Labelling of the Package : UN 1950 AEROSOLE
Limited Quantities Only (LQ) : 1L (Package $\leq$ 30 kg)
RID-Class : 2.1; 5F
Labels; Classification Code; Hazard
Identification Number)
Labelling of the Package : UN 1950 AEROSOLE
Limited Quantities Only (LQ) : 1L (Package $\leq$ 30 kg)
IMDG-Class : 2.1
(Labels; EmS) : F-D, S-U
Limited Quantities Only (LQ) : 1L (Package $\leq$ 30 kg)
ICAO-TI und IATA-DGR : 2.1 Flammable gas
Labelling of the Package : UN 1950 AEROSOLE

14.4. Packaging group

ADR : --
RID : --
IMDG : --
IATA : --

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14.5. Environmental hazards

Environmentally hazardous according to ADR : no
Environmentally hazardous according to RID : no
Marine Pollutant according to IMDG-Code : no

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

15. Regulatory information

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

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

Other Information:

Observe employment restrictions under the law on the protection of mothers at work, in training and during studies (Maternity Protection Act - MuSchG).

Observe national regulations on the protection of young people in the workplace.

Directive 2012/18/EU

Named dangerous substances - ANNEX I Substance is not listed.

National regulations

Water hazard class: Water hazard class 1 (slightly hazardous for water).

15.2. Chemical safety assessment: For this substance a chemical safety assessment has been carried out.

16. Other information

Full text of hazard statements in sections 2 and 3.

H220 Extremely flammable gas.
H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H304 May be fatal if swallowed and enters airways.
EUH066 Repeated exposure may cause skin dryness or cracking.

Department issuing data specification sheet:

Contact: Technische Chemie GmbH & Co. KG

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally contractual relationship.