

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



64783 Dimethyl Sulfoxide

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Revised edition: 28.07.2020

Version: 4

Printed: 20.11.2020

1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1. Product Identifier

Product Name: Dimethyl Sulfoxide

Article No.: 64783

1.2. Relevant identified Uses of the Substance or Mixture and Uses advised against

Identified uses:

Laboratory chemical
Laboratory and analytical uses

Uses advised against:

1.3. Details of the Supplier of the Safety Data Sheet (Producer/Importer)

Company: Kremer Pigmente GmbH & Co. KG

Address: Hauptstr. 41-47, 88317 Aichstetten, Germany

Tel./Fax.: Tel +49 7565 914480, Fax +49 7565 1606

Internet: www.kremer-pigmente.com

E-Mail: info@kremer-pigmente.com

Importer: --

1.4. Emergency No.

Emergency No.: +49 7565 914480 (Mon-Fri 8:00 - 17:00)

1.4.2 Poison Center:

2. Hazards Identification

2.1. Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 (CLP/GHS)

This product does not require classification and labelling as hazardous according to CLP/GHS.

Possible Environmental Effects:

2.2. Label Elements

Classification according to Regulation (EC) No. 1272/2008 (CLP/GHS)

No classification required according to the CLP/GHS guidelines.

Hazard designation:

Not applicable.

Signal word:

Hazard designation:

Safety designation:

Hazardous components for labelling:

2.3. Other Hazards

3. Composition/Information on Ingredients

3.1. Substance

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3.2. Mixture

Chemical Characterization:

Information on Components / Hazardous Ingredients:

Dimethyl sulfoxide; REACH Reg. No. 01-2119431362-50-xxxx

100 %

CAS-Nr: 67-68-5

EINECS-Nr: 200-664-3

EC-Nr:

Additional information:

4. First Aid Measures

4.1. Description of the First Aid Measures

General information:

Seek medical attention in case of complaints.

After inhalation:

Supply fresh air.

After skin contact:

Remove contaminated clothing. Wash off immediately with plenty of water and soap.

After eye contact:

*Carefully rinse eyes with water for several minutes.
Seek medical attention if irritation persists.*

After ingestion:

*Rinse mouth with plenty of water.
If symptoms persist consult physician.*

4.2. Most important Symptoms and Effects, both Acute and Delayed

Symptoms:

Irritating.

Effects:

4.3. Indication of any Immediate Medical Attention and special Treatment needed

Treatment:

No information available.

5. Fire-Fighting Measures

5.1. Extinguishing Media

Suitable extinguishing media:

Foam, carbon dioxide (CO₂), extinguishing powder, water.

Unsuitable extinguishing media:

Water with full jet.

5.2. Special Hazards arising from the Substance or Mixture

Special hazards:

Combustible.

Vapor is heavier than air and spreads along the ground.

When strongly heated an explosive mixture with air can be formed.

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Formation of hazardous combustion gases or vapors possible in the event of fire.

In case of fire: formation of sulfuric acids.

5.3. Advice for Firefighters

Protective equipment:

Wear suitable protective clothing.

Wear self-contained respiratory protective device.

Further information:

Reduce escaping gases/fumes/mist with water spray.

Avoid contamination of sewage system, open water ways and ground water.

6. Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal precautions:

Wear appropriate protective equipment. Keep spectators away.

Do not inhale aerosol/fumes/vapors.

Evacuate the danger area, observe emergency procedures, consult an expert.

6.2. Environmental Precautions

Environmental precautions:

Do not allow entering sewage system.

6.3. Methods and Material for Containment and Cleaning Up

Methods and material:

Contain with absorbent, inert material (sand, earth) and dispose accordingly.

6.4. Reference to other Sections

See Section 13 for information on disposal.

7. Handling and Storage

7.1. Precautions for Safe Handling

Instructions on safe handling:

Provide adequate ventilation.

Hygienic measures:

Wash hands before breaks and after work.

7.2. Conditions for Safe Storage, including any Incompatibilities

Storage conditions:

Store product in a cool and well ventilated area.

Requirements for storage areas and containers:

Keep container tightly closed.

Information on fire and explosion protection:

Take measures to prevent electrostatic discharge.

Do not store together with ignitable sources, heat and fire.

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Storage class:

10; Combustible liquids (TRGS 510)

Further Information:

Storage temperature: 15 - 25°C

7.3. Specific End Use(s)

Further information:

No further information available.

8. Exposure Controls/Personal Protection

8.1. Parameters to be Controlled

Parameters to be controlled (DE):

TRGS 900

Dimethyl sulfoxide (CAS 67-68-5), TLV: 50 ppm, 160 mg/m³, 2(l)

Parameters to be controlled:

Derived No-Effect Level (DNEL):

484 mg/m³ (worker, inhalation, long-term exposition - systemic effects)

265 mg/m³ (worker, inhalation, long-term exposition - local effects)

200 mg/m³ bw/d (worker, skin contact, long-term exposition - systemic effects)

Predicted No-Effect Concentration (PNEC):

Fresh water: 17 mg/l

Fresh water sediment: 13.4 mg/kg

Sea water: 1.7 mg/l

Sewage treatment system (STP): 11 mg/l

Soil: 3.02 mg/kg

Additional Information:

8.2. Exposure Controls

Technical protective measures:

Technical protective measures have priority to personal protective measures.

Personal Protection

General protective measures:

Wear adequate protective clothing.

Keep away from foodstuffs and drinks. Do not eat, drink or smoke during work. Wash hands before breaks and at the end of work.

Respiratory protection:

In case of formation of dust/vapor.

Recommended: filter A (EN 143)

Hand protection:

Protective gloves (EN 374)

Protective glove material:

Butyl rubber (480 min, > 0.35 mm)

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Eye protection:

Safety glasses with protective shields (EN 166).

Body protection:

Protective clothing (flame-proof, antistatic).

Environmental precautions:

Do not allow entering sewerage system.

9. Physical and Chemical Properties

9.1. Information on Basic Physical and Chemical Properties

Form: liquid

Color: colorless

Odor: odorless

Odor threshold:

No information available.

pH-Value:

not available

Melting temperature:

18.5°C

Boiling temperature:

189°C (1013 hPa)

Flash point:

87°C (1013 hPa)

Evaporation rate:

No information available.

Flammability (solid, gas):

Product is combustible, but not easily flammable.

Upper explosion limit:

28.5 Vol.-%

Lower explosion limit:

2.6 Vol.-%

Vapor pressure:

0.6 hPa (20°C)

Vapor density:

2.7 (air =1)

Density:

1.10 g/cm³ (20°C)

Solubility in water:

1000 g/l (20°C)

Coefficient of variation (n-Octanol/Water):

-1.35 logPOW

Auto-ignition temperature:

300 - 302°C (1013 hPa)

Decomposition temperature:

> 189°C

Viscosity, dynamic:

2.14 mPa.s (20°C)

Explosive properties:

Product does not present an explosion hazard.

Oxidizing properties:

none

Bulk density:

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9.2. Further Information

Solubility in solvents:

Viscosity, kinematic: 1.94 mm²/s (20°C)

Burning class:

Solvent content:

Solid content:

Particle size:

Other information:

Temperature class: T2 (maximum temperature: 300°C)

10. Stability and Reactivity

10.1. Reactivity

An explosive dust/air mixture can be formed when strongly heated.

10.2. Chemical Stability

Product is hygroscopic.

10.3. Possibility of Hazardous Reactions

Risk of explosion with: acetylides, org. halides, perchlorates, acid chlorides, non-metallic halides, iron(III)-compound, nitrates, fluorides, chlorates, hydrides, perchloric acid, phosphorus oxides, nitric acid, silver compounds, silicon compounds, silanes, acid halides.

10.4. Conditions to Avoid

Conditions to avoid:

Strong heating.

Thermal decomposition:

Thermal decomposition above 189°C.

10.5. Incompatible Materials

Different plastics

10.6. Hazardous Decomposition Products

In the event of fire: see chapter 5.

10.7. Further Information

11. Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

LD50, oral: 28300 mg/kg (rat; OECD 401)

LD50, dermal: 40000 mg/kg (rat)

LC50, inhalation: > 5.33 mg/l (4h; OECD 203)

Primary effects

Irritant effect on skin:

Slight irritant effect (rabbit; OECD 404)

Irritant effect on eyes:

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Slight irritant effect (rabbit; OECD 405).

Inhalation:

No information available.

Ingestion:

No information available

Sensitization:

Non sensitizing (guinea pig; OECD 406).

Mutagenicity:

In vivo genetic-toxicity: Chromosome analysis: negative (rat, m/f, intraperitoneal; OECD 474)
In vitro genetic-toxicity: Ames-Test negative (Salmonella typhimurium; OECD 471)
In vitro genetic toxicity: Mammalian Cell Test (ovaries of the chinese hamster, OECD 479): negative
In vitro genetic toxicity: Mammalian Chromosomal Aberration Test (OECD 473): negative

Reproductive toxicity:

No information available.

Carcinogenicity:

No relevant data found.

Teratogenicity:

No teratogenic effects expected.

Specific target organ toxicity (STOT):

Single exposure: no information available.
Repeated exposure: no information available.

Additional toxicological information:

Possible symptoms:
After intake: CNS disorders, nausea, tiredness, headache.
Damage to liver and kidney.
When used and handled according to specifications, however, hazardous effects are unlikely.
Handle in accordance with good industrial hygiene and safety practice.

12. Ecological Information

12.1. Aquatic Toxicity

Fish toxicity:

LC50: > 25000 mg/l (96h, Danio rerio; OECD 203)

Daphnia toxicity:

EC50: 24600 mg/l (48h, Daphnia magna; OECD 202)

Bacteria toxicity:

EC10: 7100 mg/l (16h, Pseudomonas putida; IUCLID)
EC50: 10 - 100 mg/l (30min, active sludge; IUCLID)

Algae toxicity:

EC50: 17000 mg/l (72h, Pseudokirchneriella subcapitata; OECD

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12.2. Persistency and Degradability

31 % (28d); not readily biodegradable (OECD 301D)

12.3. Bioaccumulation

log POW: -1.35. No bioaccumulation expected.

12.4. Mobility

No information available.

12.5. Results of PBT- und vPvP Assessment

PBT/vPvB assessment not available as chemical safety assessment is not required / not conducted.

12.6. Other Adverse Effects

Water hazard class:

Do not let run into surface waters, waste water or soil.

Behaviour in sewage systems:

Further ecological effects:

AOX Value:

13. Disposal Considerations

13.1. Waste Treatment Methods

Product:

Dispose of product residues according to the waste disposal guidelines 2008/98/EC as well as according to official national and local regulations.

Leave chemical in original containers. Do not mix with other waste.

European Waste Code (EWC):

Uncleaned packaging:

Waste Code No.:

14. Transport Information

14.1. UN Number

ADR, IMDG, IATA

14.2. UN Proper Shipping Name

ADR/RID:

No hazardous goods according to ADR (land transportation).

IMDG/IATA:

No hazardous goods according to IMDG.

14.3. Transport Hazard Classes

ADR Class:

not applicable

Hazard no.:

Classification code:

Tunnel restriction code:

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IMDG Class (sea):

Hazard no.:

EmS No.:

IATA Class:

not applicable

Hazard no.:

14. 4. Packaging Group

ADR/RID:

not applicable

IMDG:

IATA:

14. 5. Environmental Hazards

no

14. 6. Special Precautions for User

none known

14. 7. Transportation in Bulk according to Annex II of MARPOL 73/78 and IBC-Code

not applicable

14. 8. Further Information

15. Regulatory Information

15. 1. Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

Water hazard class:

1, slightly hazardous for water (German Regulation)

Local regulations on chemical accidents:

Seveso III: does not apply

Employment restrictions:

The employment restrictions for young workers in accordance with the Youth Employment Protection Law are to be observed.

Restriction and prohibition of application:

EC. REACH, Section XVII, Restrictions on the Manufacture, Placing on the Market and Use of Certain Dangerous Substances, Preparations and Articles: not applicable

Technical instructions on air quality:

5.2.5.: Organic substances: > 25 wt.-% ($m \geq 0.50$ kg/h: conc. 50 mg/m³)

15. 2. Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this product.

EC SVHC-List: This product does not contain a substance in the candidate list for substances of very high concern (REACH Regulation (EC) 1907/2006, Article 57)

15. 3. Further Information

Regulation (EC) 649/2012 concerning the export and import of

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dangerous chemicals: Not applicable
Regulation (EC) 1005/2009 - Substances that Deplete the Ozone Layer: not regulated / not applicable
Regulation (EC) 850/2004 - Persistent organic pollutants and amending Directive 79/117/EEC: not regulated / not applicable
Regulation (EU) No. 98/2013 on the marketing and use of explosives precursors: Not listed
Regulation (EC) 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors: not forbidden and/or not restricted
RoHS Directive 2011/65/EC on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS 2): not listed.
EU Water Directive (2006/60/EC): not listed
Decopaint Directive (2004/42/EC):
VOC Content: 100 %
Listed in the following inventories:
REACH (EU), TSCA (US), AICS (AUS), DSL (CA), KECI (KR), ENCS/ISHL (JP), PICCS (PH), NZIoC (NZ), IECSC (CN), TCSI (TW), CICR (TR), INSQ (MX)

16. Other Information

This product should be stored, handled and used in accordance with good hygiene practices and in conformity with any legal regulations. This information contained herein is based on the present state of knowledge and is intended to describe our product from the point of view of safety requirements. It should be therefore not be construed as guaranteeing specific properties.