Safety Data Sheet

N,N-dimethylformamide-d7

Classification acc. to 29 CFR 1910.1200

Version number: GHS 5.0
Replaces version of: 10.06.2025 (GHS 4)

Revision: 16.11.2026

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

1.1 Product identifier

Identification of the substance	**N,N-dimethylformamide-d7**
CAS number	4472-41-7
Alternative name(s)	dimethyl formamide-d7

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

Relevant identified uses	industrial uses the product is intended for research, analysis and scientific education scientific research and development product and process oriented research and development laboratory and analytical use feedstock use process agent use laboratory chemical

1.3 Details of the supplier of the safety data sheet

Zeochem AG
Joweid 5, CH-8630 Rüti
Switzerland

Telephone: +41 44 922 93 93
e-Mail: info@zeochem.com
Website: https://www.zeochem.com

1.4 Emergency telephone number

Poison centre

Country	Name	Telephone
Switzerland	Toxzentrum Zürich / Tox. Info Suisse	+41 44 251 51 51 / CH: 145 - 24h/7d
United States	CHEMTREC USA	+1 800 424 9300 - 24h/7d

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.6	flammable liquid	3	Flam. Liq. 3	H226
3.1O	acute toxicity (oral)	5	Acute Tox. 5	H303
3.1D	acute toxicity (dermal)	5	Acute Tox. 5	H313
3.1I	acute toxicity (inhal.)	3	Acute Tox. 3	H331
3.3	serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.7	reproductive toxicity	1B	Repr. 1B	H360

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling

- Signal word danger

2.2.1.2 Pictograms

GHS02, GHS06, GHS08	

Hazard statements	
H226	flammable liquid and vapour
H303+H313	may be harmful if swallowed or in contact with skin
H319	causes serious eye irritation
H331	toxic if inhaled
H360	may damage fertility or the unborn child

Precautionary statements	
P201	obtain special instructions before use
P210	keep away from heat/sparks/open flames/hot surfaces. No smoking
P240	ground/bond container and receiving equipment
P241	use explosion-proof electrical/ventilating/lighting equipment
P242	use only non-sparking tools
P243	take precautionary measures against static discharge
P261	avoid breathing dust/fume/gas/mist/vapours/spray
P271	use only outdoors or in a well-ventilated area
P280	wear protective gloves/protective clothing/eye protection/face protection
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P311	call a POISON CENTER/doctor
P321	specific treatment (see on this label)
P370+P378	in case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish
P403+P233	store in a well-ventilated place. Keep container tightly closed
P403+P235	store in a well-ventilated place. Keep cool
P405	store locked up

Precautionary statements	
P501	dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Other hazards

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

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	N,N-dimethylformamide-d7
Identifiers	
CAS No	4472-41-7
Purity	≥99 %
Molecular formula	C3D7NO
Molar mass	80.1 $^{g}/_{mol}$

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

Store in a dry place.

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Avoidance of ignition sources. Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

- Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours may form explosive mixtures with air.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

- Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. Use local and general ventilation. Ground/bond container and receiving equipment.

- Specific designs for storage rooms or vessels

- Storage temperature — Recommended storage temperature: 18 – 22 °C
15 °C

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Notation	Source
CN	dimethyl formamide (DMF)	68-12-2	OEL		20					H	GBZ 2.1

Notation

Ceiling-C	ceiling value is a limit value above which exposure should not occur
H	absorbed through the skin
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Biological limit values						
Country	**Name of agent**	**Parameter**	**Notation**	**Identifier**	**Value**	**Source**
CN	N,N-Dimethylformamide	N-methylcarbamoyl hemo-globin adducts (NMHb)	Hb	BLV	135 nmol/g	GBZ 2.1

Notation

Hb haemoglobin

Human health values

Relevant DNELs and other threshold levels				
Endpoint	**Threshold level**	**Protection goal, route of exposure**	**Used in**	**Exposure time**
DNEL	6 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	1.1 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Environmental values

Relevant PNECs and other threshold levels				
Endpoint	**Threshold level**	**Organism**	**Environmental compartment**	**Exposure time**
PNEC	44 $^{mg}/_{l}$	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	111 $^{mg}/_{kg}$	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	11.1 $^{mg}/_{kg}$	aquatic organisms	marine sediment	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Type of material

Nitrile
IIR: isobutene-isoprene (butyl) rubber

- Breakthrough times of the glove material

>30 minutes (permeation: level 2)

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Colour	clear

Particle	not relevant (liquid)

Odour	characteristic

Other safety parameters

pH (value)	not determined
Melting point/freezing point	-60 °C
Initial boiling point and boiling range	153 – 155 °C
Flash point	58 °C (closed cup)
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)

Explosive limits

- Lower explosion limit (LEL)	2.2 vol%
- Upper explosion limit (UEL)	16 vol%
Vapour pressure	not determined
Density	1.05 $^{g}/_{cm^3}$ at 20 °C
Vapour density	this information is not available

Solubility(ies)

- Water solubility	miscible in any proportion

Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	not determined

Viscosity	not determined
Explosive properties	none
Oxidising properties	none

9.2 Other information

Refractive index	1.43 (20 °C) ((lit.))

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". It's a reactive substance. The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints to prevent fire or explosion

Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

10.5 Incompatible materials

Oxidisers

10.6 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.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

May be harmful if swallowed. May be harmful in contact with skin. Toxic if inhaled.

- Acute toxicity estimate (ATE)

Oral	3,010 $^{mg}/_{kg}$
Dermal	>3,160 $^{mg}/_{kg}$
Inhalation: vapour	>5.85 $^{mg}/_{l}$/4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation
Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity
Shall not be classified as germ cell mutagenic.

Carcinogenicity
Shall not be classified as carcinogenic.

Reproductive toxicity
May damage the unborn child. May damage fertility.

Specific target organ toxicity - single exposure
Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure
Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity
Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

Process of degradability		
Process	**Degradation rate**	**Time**
DOC removal	1 %	1 d

12.3 Bioaccumulative potential
Data are not available.

BCF	0.3 – 1.2 (ECHA)

12.4 Mobility in soil

Henry's law constant	0.007 $^{Pa\ m^3}/_{mol}$ at 25 °C

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
Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

12.7 Other adverse effects
Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Waste treatment-relevant information

Solvent reclamation/regeneration.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number

UN RTDG	UN 2265
IMDG-Code	UN 2265
ICAO-TI	UN 2265

14.2 UN proper shipping name

UN RTDG	N,N-DIMETHYLFORMAMIDE
IMDG-Code	N,N-DIMETHYLFORMAMIDE
ICAO-TI	N,N-Dimethylformamide

14.3 Transport hazard class(es)

UN RTDG	3
IMDG-Code	3
ICAO-TI	3

14.4 Packing group

UN RTDG	III
IMDG-Code	III
ICAO-TI	III

14.5 Environmental hazards non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport information - National regulations - Additional information (UN RTDG)

UN number	2265
Class	3
Packing group	III

Danger label(s)	3



Special provisions (SP)	- (UN RTDG)
Excepted quantities (EQ)	E1 (UN RTDG)
Limited quantities (LQ)	5 L (UN RTDG)

International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant	-
Danger label(s)	3



Special provisions (SP)	-
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
EmS	F-E, S-D
Stowage category	A

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Danger label(s)	3



Excepted quantities (EQ)	E1
Limited quantities (LQ)	10 L

SECTION 15: Regulatory information

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

There is no additional information.

National inventories

Country	Inventory	Status
EU	REACH Reg.	substance is listed
US	TSCA	substance is listed (ACTIVE)

Legend

REACH Reg.	REACH registered substances
TSCA	Toxic Substances Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
3.1	Purity: ≥90 %	Purity: ≥99 %	yes
16	Key literature references and sources for data: General Rule for Classification and Hazard Communication of Chemicals (National Standard GB 13690). National Standard: Safety Data Sheet for Chemical Products - Content and Order of Sections. GB/T 16483. National Standard: Guidance on Compilation of Safety Data Sheet for Chemical Products. GB/T 17519.UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).	Key literature references and sources for data: Safety rules for classification and labelling of chemicals (GB 30000). National Standard: Safety Data Sheet for Chemical Products - Content and Order of Sections. GB/T 16483. National Standard: Guidance on Compilation of Safety Data Sheet for Chemical Products. GB/T 17519.UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).	yes

Key literature references and sources for data

Safety rules for classification and labelling of chemicals (GB 30000). National Standard: Safety Data Sheet for Chemical Products - Content and Order of Sections. GB/T 16483. National Standard: Guidance on Compilation of Safety Data Sheet for Chemical Products. GB/T 17519.

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H226	Flammable liquid and vapour.
H303	May be harmful if swallowed.
H313	May be harmful in contact with skin.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H360	May damage fertility or the unborn child.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.