

Chemical Safety Data Sheet MSDS / SDS

N,N-DIMETHYLFORMAMIDE-D7

Revision Date:2024-11-02 Revision Number:1

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

Product name : N,N-DIMETHYLFORMAMIDE-D7
CBnumber : CB5671517
CAS : 4472-41-7
EINECS Number : 224-745-8
Synonyms : N,N-Dimethylformamide-d7,N,N-bis(methyl-d3)formamide-d

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.
Uses advised against : none

Company Identification

Company : Chemicalbook
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone : 400-158-6606

SECTION 2: Hazards identification**GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Danger

Precautionary statements

P201 Obtain special instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P309 IF exposed or if you feel unwell:
P310 Immediately call a POISON CENTER or doctor/physician.

Hazard statements

H226 Flammable liquid and vapour
H312 Harmful in contact with skin

H319 Causes serious eye irritation

H332 Harmful if inhaled

H360 May damage fertility or the unborn child

SECTION 3: Composition/information on ingredients

Substance

Product name	: N,N-DIMETHYLFORMAMIDE-D7
Synonyms	: N,N-Dimethylformamide-d7, N,N-bis(methyl-d3)formamide-d
CAS	: 4472-41-7
EC number	: 224-745-8
MF	: C3H7NO
MW	: 73.1

SECTION 4: First aid measures

Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2) Foam Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Carbon oxides Nitrogen oxides (NOx) Combustible.

Fire may cause evolution of:

nitrogen oxides

Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

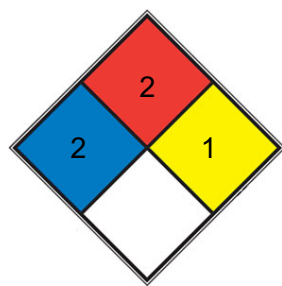
Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

NFPA 704



☒ HEALTH 2 Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. [diethyl ether](#), ammonium phosphate, iodine)

☒ FIRE 2 Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

☒ REACT 1 Normally stable, but can become unstable at elevated temperatures and pressures (e.g. [propene](#))

☐ SPEC.

☐ HAZ.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

Environmental precautions

Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemisorb?). Dispose of properly. Clean up affected area.

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Recommended storage temperature see product label.

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,7 mm Break through time: 480 min Material tested: Butoject? (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact Material: Viton?

Minimum layer thickness: 0,7 mm Break through time: 240 min

Material tested: Vitoject? (KCL 890 / Aldrich Z677698, Size M)

Body Protection

Flame retardant antistatic protective clothing.

Respiratory protection

Recommended Filter type: Filter A-(P3)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Appearance	colorless liquid
Odour	weakly amine-like
Odour Threshold	0,329 ppm
pH	No data available
Melting point/freezing point	Melting point: -60 °C
Initial boiling point and boiling range	152 °C at 1.013 hPa
Flash point	58 °C - DIN 51755 Part 1
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 16 %(V) Lower explosion limit: 2,2 %(V)
Vapour pressure	3,77 hPa at 20 °C
Vapour density	2,51
Relative density	No data available
Water solubility	at 20 °C soluble
Partition coefficient: n-octanol/water	log Pow: -0,85 - Bioaccumulation is not expected.
Autoignition temperature	No data available

Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Explosive properties	No data available
Oxidizing properties	No data available

Other safety information

Relative vapor density

2,51

SECTION 10: Stability and reactivity

Reactivity

Vapor/air-mixtures are explosive at intense warming.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Violent reactions possible with:

Alkali metals halogens halides Reducing agents

triethylaluminium nitrates

metallic oxides nonmetallic oxides Halogenated hydrocarbon Isocyanates

sodium

Sodium borohydride hydrides

Oxidizing agents Oxides of phosphorus

A risk of explosion and/or of toxic gas formation exists with the following substances: azides

Bromine Chlorine

chromium(VI) oxide potassium permanganate triethylaluminium chlorates

Halogenated hydrocarbon with

Iron

Conditions to avoid

Heating.

Incompatible materials

various plastics, Copper, Copper alloys, Tin

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 3.010 mg/kg (OECD Test Guideline 401)

Remarks: The value is given in analogy to the following substances: N,N- dimethylformamide

LC50 Inhalation - Rat - 4 h - 9 - 15 mg/l Remarks: (Lit.)

The value is given in analogy to the following substances: N,N-dimethylformamide LD50 Dermal - Rabbit - 1.500 mg/kg

Remarks: (IUCLID)

The value is given in analogy to the following substances: N,N-dimethylformamide

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation Remarks: (IUCLID)

The value is given in analogy to the following substances: N,N-dimethylformamide

Serious eye damage/eye irritation

Eyes - Rabbit Result: Eye irritation Remarks: (IUCLID)

The value is given in analogy to the following substances: N,N-dimethylformamide

Respiratory or skin sensitization

Remarks: (Lit.)

The value is given in analogy to the following substances: N,N-dimethylformamide Sensitisation test: - Mouse

Result: negative

(OECD Test Guideline 406)

Remarks: The value is given in analogy to the following substances: N,N- dimethylformamide

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation Result: negative

Remarks: (ECHA)

The value is given in analogy to the following substances: N,N-dimethylformamide Test Type: Micronucleus test

Species: Mouse

Cell type: Bone marrow

Application Route: Intraperitoneal injection

Result: negative Remarks: (ECHA)

The value is given in analogy to the following substances: N,N-dimethylformamide

Carcinogenicity

No data available

Reproductive toxicity

May damage the unborn child.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Toxicity

SECTION 12: Ecological information

Toxicity

Toxicity to fish

flow-through test LC50 - *Lepomis macrochirus* (Bluegill sunfish) -

7.100 mg/l - 96 h (US-EPA)

Remarks: The value is given in analogy to the following substances: N,N-dimethylformamide

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - *Daphnia magna* (Water flea) - 13.100 mg/l - 48 h (OECD Test Guideline 202)

Remarks: The value is given in analogy to the following substances: N,N-dimethylformamide

Toxicity to algae

static test EC50 - *Desmodesmus subspicatus* (green algae) - > 1.000 mg/l - 72 h

(DIN 38412)

Remarks: The value is given in analogy to the following substances: N,N-dimethylformamide

Toxicity to bacteria

static test EC50 - *Vibrio fischeri* - 12.300 - 17.500 mg/l - 5 min Remarks: (ECHA)

The value is given in analogy to the following substances: N,N- dimethylformamide

Persistence and degradability

Biodegradability Result: - Readily biodegradable.

aerobic - Exposure time 21 d (OECD Test Guideline 301E)

Remarks: The value is given in analogy to the following substances: N,N-dimethylformamide

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Other adverse effects

No data available

SECTION 13: Disposal considerations

Waste treatment methods

Product

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

UN number

ADR/RID: 2265 IMDG: 2265 IATA: 2265

UN proper shipping name

	ADR/RID: N,N-DIMETHYLFORMAMIDE IMDG: N,N-DIMETHYLFORMAMIDE	
	IATA: N,N-Dimethylformamide	
14.3	Transport hazard class(es) ADR/RID: 3 IMDG: 3	IATA: 3
14.4	Packaging group ADR/RID: III IMDG: III	IATA: III
14.5	Environmental hazards ADR/RID: no IMDG Marine pollutant: no	IATA: no
14.6	Special precautions for user No data available	

SECTION 15: Regulatory information

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

Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

Korea Existing Chemicals List (KECL):Not Listed. website: <http://ncis.nier.go.kr>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Not Listed. website: <https://emb.gov.ph/>

United States Toxic Substances Control Act (TSCA) Inventory:Not Listed. website: <https://www.epa.gov/>

SECTION 16: Other information

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

References

- 【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- 【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- 【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- 【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- 【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- 【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- 【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- 【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- 【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- 【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

Disclaimer:

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