

MATERIAL SAFETY DATA SHEET	Page : 1 / 6
Dimethylformamide	

Synonyms

DMF
n,n-dimethylformamide
n-formyldimethylamine

1 IDENTIFICATION OF THE SUBSTANCE

Identification of the product : Liquid.
Trade name : Dimethylformamide
Type of product : Organic compounds.
Use : Industrial
Chemical formula : C₃H₇NO

2 HAZARDS IDENTIFICATION

Risk Phrases : Toxic by inhalation, in contact with skin and if swallowed. Harmful by inhalation and in contact with skin. Irritating to eyes.

Hazards identification : Absorbed through the skin.

Primary route of exposure : Inhalation. Skin contact. Ingestion.

Symptoms relating to use

- Inhalation : Severe inhalation hazard. Irritation of the respiratory tract and the other mucous membranes. Abdominal pain, nausea. Cough. Dizziness. Sore throat.
- Skin contact : Irritating to skin. Redness, pain. Itching.
- Eye contact : Eye irritation. Redness, pain. Blurred vision. Tears.
- Ingestion : May cause corrosion or irritation of the linings of the mouth, throat, and gastrointestinal tract. Must not come into contact with food or be consumed. Headache. Cramps. Nausea. Vomiting. Diarrhea.

Caution : Vapour mixes readily with air, forming explosive mixtures. > 58 C.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Components : This product is hazardous

Substance name	Contents	CAS No	EC No	Annex No	Classification
N,N Dimethylformamide	100 %	68-12-2	200-679-5	616-001-00-X	Repr. Cat. 2: R61 Xn, R20/21 Xi: R36



3 COMPOSITION / INFORMATION ON INGREDIENTS (continued)

R61 : May cause harm to the unborn child.
 R20/21 : Harmful by inhalation and in contact with skin.
 R36 : Irritating to eyes.

4 FIRST AID MEASURES**First aid measures**

- Inhalation : Assure fresh air breathing. Allow the victim to rest. Seek medical attention immediately.
 - Skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Obtain medical attention.
 - Eye contact : Rinse immediately with plenty of water. Contact ophthalmologist immediately.
 - Ingestion : If swallowed, seek medical advice immediately and show this container or label. Rinse mouth. Induce vomiting if victim completely conscious/alert. Administer an aqueous slurry of activated charcoal followed by a cathartic such as magnesium citrate or sorbitol. Place the victim in the recovery position. Take to hospital.
- Emergency medical treatment** : Immediate specific treatment is necessary in case of poisoning.
- Note to physician** : Prolonged medical observation may be indicated. Treat symptomatically.

5 FIRE-FIGHTING MEASURES

- Flammable class** : This product is flammable.
- Specific hazards** : Vapour mixes readily with air, forming explosive mixtures. > 58 C.
- Hazardous combustion products** : Thermal decomposition generates : Toxic gases.
- Prevention** : No naked lights. No smoking.
- Suitable extinguishing media : Alcohol resistant foam.
Powder.
Water spray.
Carbon dioxide.
- Surrounding fires** : Use water spray or fog for cooling exposed containers.
- Protection against fire** : Do not enter fire area without proper protective equipment, including respiratory protection.
- Special procedures** : Exercise caution when fighting any chemical fire.

6 ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.
- Environmental precautions** : Prevent entry to sewers and public waters.
Notify authorities if product enters sewers or public waters.
- Clean up methods** : Clean up any spills as soon as possible, using an absorbent material to collect it. Use suitable disposal containers.

7 HANDLING AND STORAGE

Personal protection	: Avoid all unnecessary exposure.
Technical protective measures	: Both local exhaust and general room ventilation are usually required.
Storage	: Keep only in the original container in a cool, well ventilated place. Keep container closed when not in use.
Storage - away from	: Carbon tetrachloride. Halogens. Inorganic nitrate. Oxidizer.
Handling	: Keep away from food, drink and animal feeding stuffs. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Handle in accordance with good industrial hygiene and safety procedures. Use only in well ventilated areas.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal protection



- Respiratory protection	: Suitable respiratory equipment. Filtrertype A.
- Hand protection	: Gloves. Butylrubber.
- Skin protection	: Wear suitable protective clothing.
- Eye protection	: Chemical goggles or face shield with safety glasses.
- Ingestion	: When using, do not eat, drink or smoke.
Industrial hygiene	: Provide local exhaust or general room ventilation.
Occupational Exposure Limits	
- Netherlands	: (2003) TWA [mg/m ³] : 15 (2003) TWA [ppm] : 5

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state at 20 °C	: Liquid.
Colour	: Colourless to light yellow.
Odour	: Characteristic.
pH value	: 7
Melting point [°C]	: -61
Boiling point [°C]	: 153
Density	: 0.95 g/cm ³
Vapour pressure [20°C]	: 492 Pa
Viscosity	: 0.802 mPa.s
Solubility in water	: Complete
Flash point [°C]	: 58
Auto-ignition temperature [°C]	: 440
Explosion limits - lower [%]	: 2.2
Explosion limits - upper [%]	: 15.2
Log P octanol / water at 20°C	: -0.87

10 STABILITY AND REACTIVITY

Stability and reactivity	: Stable under normal conditions
Hazardous decomposition products	: Thermal decomposition generates : Toxic vapours.
Hazardous reactions	: Reacts violently with . Inorganic nitrate. Carbon tetrachloride. Hexachlorocyclohexane. Oxidizing agent Halogenated compounds. Fire/explosion hazard.
Hazardous polymerization	: Will not occur.
Hazardous properties	: Attacks : Tin. Copper and its alloys. Product can attack some forms of plastics.
Materials to avoid	: Tin. Copper and its alloys Hexachlorocyclohexane. Carbon tetrachloride Halogenated compounds. Oxidizing agent. Plastic.

11 TOXICOLOGICAL INFORMATION

Toxicity information	: Toxic by inhalation, in contact with skin and if swallowed. Harmful by inhalation and in contact with skin. Irritating to eyes.
Acute toxicity	
- Inhalation	: Irritation of the respiratory tract and the other mucous membranes.
- Dermal	: Irritating to skin.
- Ocular	: Irritating to eyes.
Rat oral LD50 [mg/kg]	: 3040
Rabbit dermal LD50 [mg/kg]	: > 3160
Rat inhalation LC50 [mg/l/4h]	: > 5.9
Chronic toxicity	
- Inhalation	: Chronic exposure causes liver and kidney damages. This material or its emissions may aggravate existing cardiovascular disease or function.
Carcinogenicity	: Not listed.
Mutagenicity	: Not listed.
Toxic for reproduction : unborn child	: May cause harm to the unborn child Category 2 : Substances which should be regarded as if they cause developmental toxicity to humans.

12 ECOLOGICAL INFORMATION

Ecological effects information	
Biodegradation [%]	: 90 - 100
Bioaccumulative potential	: None under normal conditions.
Persistence - degradability	: Biodegradable.
BOD 5 (gO2/g)	: 0.9
ThOD (gO2/g)	: 0.3645
LC50-96 Hour - fish [mg/l]	: 6300

12 ECOLOGICAL INFORMATION (continued)

48 Hour-EC50 - Daphnia magna [mg/l] : > 100
]
 IC50 72h Algae [mg/l] : No data available

13 DISPOSAL CONSIDERATIONS

General : Hazardous waste due to toxicity.
 Dispose in a safe manner in accordance with local/national regulations.

Disposal method : Dispose of this material and its container at hazardous or special waste collection point.
 Recover waste liquids for recycling/re-use.
 Preferred disposal for this product is through combustion.

14 TRANSPORT INFORMATION

Shipping name : N,N-DIMETHYLFORMAMIDE

UN No. : 2265

H.I. nr : 30

Land transport

ADR/RID : Class : 3
 Group : III

- Tremcard nr. : 30S2256

Sea transport

- IMO-IMDG code : Class : 3
 Packaging group: III

- MFAG-Nr : 321

- IMDG-Marine pollution : No

Air transport

- ICAO/IATA : Packaging instructions passenger: 309/Y309
 Packaging instructions cargo : 310
 Packaging group: III
 Class : 3

15 REGULATORY INFORMATION

Symbol(s)



R Phrase(s)

S Phrase(s)

T : Toxic

R61 : May cause harm to the unborn child
 R20/21 : Harmful by inhalation and in contact with skin
 R36 : Irritating to eyes.

S45 : In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible).
 S53 : Avoid exposure - obtain special instructions before use.

16 OTHER INFORMATION

Text of R-Phrases in § 2	: R61 : May cause harm to the unborn child. R20/21 : Harmful by inhalation and in contact with skin. R36 : Irritating to eyes.
Further information	: None.

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