

SAFETY DATA SHEET

N,N DIMETHYLFORMAMIDE

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

1.1 Product identifier:	
CAS Number:	68-12-2
EC number:	200-679-5
1.2 SYNONYMS:	• Dimethylformamide • DMF • N,N-Dimethylmethanamide • Formamide, N,N-dimethyl- • N,N-Dimethylformamido methane

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 1272/2008 Acute toxicity,inhalation(Category 4) Acute toxicity,oral (Category 4) Acute toxicity,dermal (Category 3) Serious eye damage/ eye irritation(category 2A) Skin corrosion/ irritation (Category 2) Carcinogenicity (Category 1B) Reproductive Toxicity (Category 2) Aquatic Acute Toxicity (Category 3) Aquatic Chronic Toxicity (Category 3)
Hazard Pictograms:	
Signal Word:	Danger

Hazard statements:	H302: Harmful if swallowed. H312: Harmful in contact with skin. H332: Harmful if inhaled. H315: Causes skin irritation. H319: Causes serious eye irritation. H350: May cause cancer. H361: Suspected of damaging fertility or the unborn child. H373: May cause damage to organs through prolonged or repeated exposure. H411: Toxic to aquatic life with long-lasting effects.
Precautionary Statements:	P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P280: Wear protective gloves/protective clothing/eye protection/face protection. P261: Avoid breathing dust/fume/gas/mist/vapors/spray. P273: Avoid release to the environment. P284: Wear respiratory protection P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302+P352: IF ON SKIN: Wash with plenty of water. 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.

	P308+P313: IF exposed or concerned: Get medical advice/attention. P310: Immediately call a POISON CENTER or doctor/physician. P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up. P501: Dispose of contents/container in accordance with local/regional/national/international regulations.
2.3 Other hazards:	
Inhalation:	may cause respiratory irritation, dizziness, nausea, headache, and, with prolonged exposure, potential damage to the liver and kidneys.
Ingestion:	can cause symptoms such as nausea, vomiting, abdominal pain, dizziness, and potentially lead to liver and kidney damage.
Skin Contact:	can cause irritation, redness, and dryness, and prolonged exposure may lead to more severe skin damage or absorption of the substance through the skin, potentially affecting internal organs.
Eye contact:	can cause irritation, redness, tearing, and discomfort, and may lead to serious eye damage with prolonged or repeated exposure.
Chronic Exposure:	may lead to long-term effects such as liver and kidney damage, reproductive toxicity, nervous system disorders, and an increased risk of cancer.

Aggravation of pre-existing conditions:	may worsen conditions such as liver or kidney disease, respiratory disorders, and skin conditions. Individuals with a history of reproductive health issues may also experience exacerbated effects.
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SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation:	Substances
CAS No:	Description: 68-12-2 N,N DIMETHYLFORAMIDE
Identification number(s):	EC number: 200-679-5

SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact:	Remove contaminated clothing. Wash with soap and water. Consult a physician.
After eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. consult a physician.
After swallowing:	Rinse mouth with water. Immediately after ingestion. Never give anything by mouth to an unconscious person. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed:	acute symptoms include respiratory irritation, nausea, dizziness, and skin or eye irritation,

	with delayed effects such as liver and kidney damage, reproductive toxicity, and carcinogenicity from prolonged exposure.
4.3 Indication of any immediate medical attention and special treatment needed:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media:	Carbon dioxide. Water spray. Alcohol-resistant foam.
5.2 Special hazards arising from the substance or mixture:	carbon monoxide and nitrogen oxides
5.3 Advice for firefighters:	Wear fully protective suit, safety glasses and respiratory device. Cool tanks/drums with water spray/ remove them into safety.
5.4 further information:	No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Avoid dust accumulation. Seek medical attention.
6.2 Environmental precautions:	Do not enter this chemical into drains.
6.3 Methods and material for containment and cleaning up:	Take up spill into absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Spill must not

	return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
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SECTION 7: Handling and storage

7.1 Precautions for safe handling:	For use in are with adequate ventilation. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material Do not use in confined spaces. Electrostatic discharge protection. Minimize dust generation and accumulation. Avoid ingestion and inhalation
7.2 Conditions for safe storage, including any incompatibilities:	Store in original containers. Keep containers securely sealed Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Store in a dry and dark area.
Requirements to be met by storerooms and receptacles:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
7.3 Specific end uses:	no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters	
Additional information about design of technical facilities:	A system of local and general exhaust is recommended.
8.2 Exposure controls	

Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment:	Dust respirator, protective masks, wearing anti chemical gloves, rubber gloves, etc.
General protective and hygienic measures:	Eyes, body and hand protection, maintain indoor air unobstructed. Wear protective equipment.
	Respiratory protection: Required.
Protection of hands:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws. Wash and dry hands.
	Eye protection: Required
Protection of Body:	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties	
General Information	
Appearance: Form:	Liquid
Colour:	Colourless to pale yellow.
Odour:	Faint ammonia or fishy odor
pH-value:	7
Melting point/Melting range:	-60°C
Boiling point/Boiling range:	153°C
Flammability (solid, gaseous):	Flammable
Ignition temperature:	430°C

Decomposition temperature:	No data available
Self-igniting:	No
Flash point:	58°C
Danger of explosion:	Not determined
Explosion limits: Lower:	2.7%
Explosion limits: Upper:	18%
Vapour pressure:	0.32 kPa (at 25 °C)
Density at 20 °C:	0.944 g/cm ³
Relative density:	0.944
Vapour density:	2.5
Evaporation rate:	Not determined
Solubility in / Miscibility with- water at 20 °C:	Soluble in water
Partition coefficient:(n- octanol/water)	-0.85
Viscosity:	0.92cP (at 25°C)

SECTION 10: Stability and reactivity

10.1 Reactivity	No data available
10.2 Chemical stability	This chemical is stable under storage conditions.
10.3 Possibility of hazardous reactions	may release toxic gases when heated to high temperatures, reaction with strong oxidizers. Strong acids or bases.
10.4 Conditions to avoid	High temperature, moisture, strong oxidizers, acids and bases.
10.5 Incompatible materials	Strong oxidizing agents, Strong acids and bases, reactive metals.
10.6 Hazardous decomposition products	Ammonia, Carbon monoxide, Carbon dioxide, Nitrogen oxides, Aldehydes, Ammonia.

SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute Toxicity:	LD50 (Oral, Rat) : 3010 mg/kg LD50 (Dermal, Rabbit) : 3160 mg/kg LC50 (Inhalation Rat) : no data available
Skin corrosion/Irritation:	Not classified
Serious eye damage/irritation:	Causes serious eye irritation.
Respiratory damage/irritation:	Not classified
Ingestion:	Not classified
Germ cell mutagenicity:	No data available
Carcinogenicity:	May cause cancer
Reproductive toxicity:	May damage the unborn child
Specific target organ toxicity - single exposure:	Not classified
Specific target organ toxicity - repeated exposure:	No data available
Aspiration hazard:	No data available
Signs and Symptoms of Exposure:	Refer section 2.3
11.2 Additional toxicological information	
Biodegradability:	moderately biodegradable

SECTION 12: Ecological information

12.1 Toxicity Aquatic toxicity:	LC50(fish): 7100 mg/l (96hr) EC50(daphnia): 13,100 mg/l (48hr) ErC50(algae): 1000 mg/l (72hr)
12.2 Persistence and degradability:	Moderately biodegradable and persistent.
12.3 Bioaccumulative potential:	Not bioaccumulative .
12.4 Mobility in soil:	Non- mobility.
12.5 Other adverse effects:	No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods	
Uncleaned packaging Recommendation:	dispose of in accordance with local hazardous waste regulations
Recommended cleansing agents:	Diluted Soap or Detergent, Isopropyl Alcohol, Sodium Bicarbonate, Acetone.

SECTION 14: Transport information

14.1 UN-Number · ADR, ADN, IMDG, IATA:	2265
14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:	N,N DIMETHYLFORMAMIDE
14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :	3
14.4 Packing group · ADR, IMDG, IATA:	3
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Handle responsibly.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	Directive 2012/18/EU, under that this substance is classified in listed substance as hazardous to the environment
Named dangerous substances:	This substance is listed in the part 2 of annex 1 to the directive.
15.2 Chemical safety assessment:	Chemical assessment has not been carried out.

SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the

limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

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