

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name: **DIMETHYLFORMAMIDE**
Supplier: **LABSCAN LIMITED,
T24-26 STILLORGAN INDUSTRIAL PARK, STILLORGAN,
CO. DUBLIN, IRELAND.**
Emergency telephone number: **+353 1 295 2684** Fax No: **+353 1 295 2685**

2. COMPOSITION/INFORMATION ON INGREDIENTS

Identification of the preparation

Chemical Name	CAS-No	EEC-No	Class	Weight %
DIMETHYL FORMAMIDE	68-12-2	616-001-00-X	Repr. Cat.2 T R61; Xn R20/21; Xi R36	100

3. HAZARDS IDENTIFICATION

Most important hazards: Irritating to eyes, respiratory system and skin.
Danger of cumulative effects, teratogenic.

Specific hazards Harmful by inhalation and in contact with skin.
May cause long-term adverse effects in the environment.
Possible risk of harm to the unborn child.

4. FIRST AID MEASURES

General advice: Show this safety data sheet to the doctor in attendance.

Inhalation: Move to fresh air in case of accidental inhalation of vapours. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus. Consult a physician after significant exposure.

Skin contact: Remove contaminated clothing immediately and wash affected skin with soap and water. Wash contaminated clothing before re-use. If skin irritation persists, call a physician.

Eye contact: If substance has got into the eyes, immediately wash out with plenty of water until medical assistance is provided. Keep eye wide open while rinsing. Consult a physician for severe cases.

Ingestion: Clean mouth with water and drink afterwards plenty of water. . Do not induce vomiting without medical advice. If signs of poisoning appear, treat as for inhalation. Consult a physician for severe cases. Subsequently administer: activated charcoal (20-40g in 10% slurry). Never give anything by mouth to an unconscious person.

Product name: **DIMETHYLFORMAMIDE****5. FIRE-FIGHTING MEASURES****Suitable extinguishing media:**

Extinguish with carbon dioxide, dry chemical, foam or waterspray.

Extinguishing media which must not be used for safety reasons:

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards:

Burning produces obnoxious and toxic fumes: carbon monoxide / Dimethylamine, nitrogen oxides.

Special protective equipment for firefighters:

Wear a positive-pressure supplied-air respirator / full protective flameproof clothing.

Specific methods:

Standard procedure for chemical fires.

Cool containers / tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions:**

Evacuate personnel to safe areas. Avoid contact with skin, eyes and clothing. Do not breathe dust or spray mist. Remove all sources of ignition. Wear a positive-pressure supplied-air respirator. Shut off leaks if without risk. Keep people away from and upwind of spill/leak. Take precautionary measures against static discharges.

Environmental precautions:

Do not let product enter drains. Contain or absorb leaking liquid with sand or earth. Prevent liquid entering sewers, basements and workpits; vapour may create explosive and toxic atmosphere. If substance has entered a water course or sewer or contaminated soil or vegetation, advise police.

Methods for cleaning up:

Absorb in earth or sand or other suitable material. Do not absorb in sawdust or other combustible materials. Transfer to covered steel drums. Contact waste disposal services. Dispose of as special waste in compliance with local and national regulations.

7. HANDLING AND STORAGE**Handling:**

Use only in area provided with appropriate exhaust ventilation. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Keep away from open flames, hot surfaces and sources of ignition.

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Storage: Keep container tightly closed in a dry and well-ventilated place. No restrictions on storage temperature. Keep away from heat and sources of ignition. Protect from light. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Electrical equipment should be protected to the appropriate standard. Store in original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name:	National occupational exposure limits:
DIMETHYL FORMAMIDE	IRL OEL: 10ppm (30mg/m ³) 8h TLV
	IRL OEL: 20ppm (60mg/m ³) 15min TLV

Engineering measures to reduce exposure

The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.

Personal protection equipment:

- **Respiratory protection:** In case of insufficient ventilation, wear suitable respiratory equipment.
- **Hand protection:** Full contact: Butyl rubber. Splash contact: viton gloves. The material should comply with 89/686/EEC and EN374.
- **Eye protection:** Goggles giving complete protection to eyes.
- **Skin and body protection:** Chemical-proof suit / flame retardant antistatic protective clothing, heavy duty work shoes.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Wash hands and face before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Formula:	HCON(CH₃)₂		
Form:	liquid		
Colour:	colourless		
Odour:	amine-like		
pH:	(20 °C)	7	(200 g/l H ₂ O)
Boiling point/range:		152 - 153	°C
Melting point/range:		-61	°C
Decomposition temperature:		350	°C
Flash point:		58.0	°C
Autoignition temperature:		410	°C

Product name: **DIMETHYLFORMAMIDE****Flammability (solid, gas):****Explosive properties:**

Explosion limits: - lower 2.2 vol. %
 - upper 16 vol. %

Oxidizing properties: no data available

Vapour pressure: (20 °C) 3.77 hPa

Relative density: (20 °C) \geq 0.94 g/cm³
 \leq 0.96 g/cm³

Bulk density: kg/m³

Solubility:

Water solubility (°C) completely miscible. g/l)

Solubility in other solvents miscible with most organic solvents;
 aliphatic hydrocarbons = insoluble.

Partition coefficient (n-octanol/water) $\log P_{ow} = -1.01$

Viscosity: (20 °C) 0.86 mPa.s

10. STABILITY AND REACTIVITY**Stability:**

Stable at normal conditions.
 Stable under recommended storage conditions.
 The product is hygroscopic.

Conditions to avoid:

Keep away from heat and sources of ignition.

Materials to avoid:

Nitrous acid and other nitrosating agents, strong oxidizing agents, halogenated compounds, alkali metals, halides, reducing agents, triethylaluminium, nitrates, metallic and non-metallic oxides.

Hazardous decomposition products:

carbon monoxide / dimethylamine

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11. TOXICOLOGICAL INFORMATION**Acute toxicity:****Inhalation:**

Harmful by inhalation. High concentration of vapours may induce unconsciousness, dizziness, headache, nausea, vomiting. LC50/inhalation/4h/rat = 9-15mg/l

Skin contact:

Harmful in contact with skin. Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. The substance can be readily absorbed through intact skin.

LD50/dermal/rabbit = 1500 mg/kg (approx.)

Eye contact:

Irritant effect on eyes.

Ingestion:

LD50/oral/rat = 2200-7550 mg/kg

Ingestion or inhalation of high concentrations may cause injuries to gastrointestinal tract, liver, kidneys and central nervous system.

LD50/oral/mouse = 3700 mg/kg

Sensitization:

Irritating to eyes, respiratory system and skin.

Long term toxicity:

Danger of serious damage to health by prolonged exposure to solvent.

Chronic toxicity:

Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. teratogenic.

12. ECOLOGICAL INFORMATION**Mobility:**

Miscible with water.

Persistence / degradability:

Biodegradable: >90%/28d. TOD: 1.86 g/g.

Bioaccumulation:

log Pow<1. No appreciable bioaccumulation is expected

Ecotoxicity:

LC50/96h/bluegill sunfish = 7.1-10.6 g/l. 9800mg/l/96h (L. macrochirus).

EC50/48h/Daphnia = 15/7 g/l

EC50/72h/algae = > 500 mg/l

Bacterial Toxicity: 20000 mg/l.

13. DISPOSAL CONSIDERATIONS**Waste from residues / unused products:**

If recycling is not practicable, dispose of in compliance with local regulations.

Can be incinerated, when in compliance with local regulations.

Product name: **DIMETHYLFORMAMIDE****Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal. Empty containers can be landfilled after cleaning, when in compliance with local regulations.

14. TRANSPORT INFORMATION**ADR/RID**

Proper shipping name: N,N- Dimethylformamide.
Class: 3 **Item:** 31(c)
Packaging group: III **HI/UN No:** 30/2265

IMO

Proper shipping name: N,N-Dimethylformamide.
Class: 3.3 **IMDG Page:** 3335
EmS: 3-06 **MFAG:** 321
Packaging group: III **UN-No:** 2265
Marine pollutant: Not applicable.

ICAO

Proper shipping name: N,N-Dimethylformamide.
Class: 3 **UN/ID No:** 2265
Packaging group: III

15. REGULATORY INFORMATION**Classification according to European directive on classification of hazardous preparations 2001/58/EC**

- **Contains:** Dimethylformamide.
- **Symbol(s):**



T - Toxic

- R -phrase(s):** R36 - Irritating to eyes.
R20/21 - Harmful by inhalation and in contact with skin
R61 - May cause harm to unborn child.
- S -phrase(s):** S36/37 - Wear suitable protective clothing and gloves.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
S53 - Avoid exposure - obtain special instructions before use.

16. OTHER INFORMATION

- Recommended restrictions:** Take notice of labels and material safety data sheets for the working chemicals.
- Recommended use:** General purpose solvent.

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Further information: Contact Labscan Limited**REVISION DATE:** 19/08/2002

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.