Material Safety Data Sheet

Version: 02

Revision Date : 15-7-2025

Section 1. Product Information and Company Identification			
Product name	N,N-Dimethyl Formamide		
Mol. formula	C3H7NO	**CAS No.**	68-12-2
Mol.wt	73,09 g/mol		
manufacturer name	Pioneers for laboratory chemicals		
Brand name	Piochem		
Address	Area 540, Industrial Zone 6th October city Giza, Egypt.		
Website	www.piochem.com		
E-mail	info@piochem.com		
Phone number	0 12 05700001		

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Flammable liquids (Category 3), H226
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 4), H312
Eye irritation (Category 2), H319
Reproductive toxicity (Category 1B), H360D

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

		R61
Xn	Harmful	R20/21
Xi	Irritant	R36

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008
Pictogram

Signal word Danger

Hazard statement(s)

H226	Flammable liquid and vapour.
H312 + H332	Harmful in contact with skin or if inhaled
H319	Causes serious eye irritation.
H360D	May damage the unborn child.

Precautionary statement(s)

P201	Obtain special instructions before use.
P280	Wear protective gloves/ protective clothing.
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.

Supplemental Hazard Statements: none

Restricted to professional users.

2.3 Other hazards

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.
Rapidly absorbed through skin.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms	:	DMF
Formula	:	C_3H_7NO
Molecular weight	:	73,09 g/mol
CAS-No.	:	68-12-2
EC-No.	:	200-679-5
Index-No.	:	616-001-00-X
Registration number	:	01-2119475605-32-XXXX

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
N,N-Dimethylformamide Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)			
CAS-No.	68-12-2	Flam. Liq. 3; Acute Tox. 4; Eye Irrit. 2; Repr. 1B; H226, H319, H312, H332, H360D, H226, H312 + H332, H319, H360	<= 100 %
EC-No.	200-679-5		
Index-No.	616-001-00-X		
Registration number	01-2119475605-32-XXXX		

Hazardous ingredients according to Directive 1999/45/EC

Component		Classification	Concentration
N,N-Dimethylformamide Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)			
CAS-No.	68-12-2	T, Repr.Cat.2, R61 - R20/21 - R36	<= 100 %
EC-No.	200-679-5		
Index-No.	616-001-00-X		
Registration number	01-2119475605-32-XXXX		

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 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

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid exposure - obtain special instructions before use.Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. 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.

Handle and store under inert gas.

Storage class (TRGS 510): Flammable liquids

7.3 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

8.1 Control parameters

Components with workplace control parameters

Derived No Effect Level (DNEL)

Application Area	Exposure routes	Health effect	Value
Workers	Skin contact	Acute systemic effects	26,3mg/kg BW/d
Workers	Inhalation	Acute systemic effects	30 mg/m3
Workers	Skin contact	Long-term systemic effects	3,31mg/kg BW/d
Workers	Inhalation	Long-term systemic effects	15 mg/m3
Workers	Inhalation	Long-term local effects	15 mg/m3
Workers	Inhalation	Acute local effects	30 mg/m3

Predicted No Effect Concentration (PNEC)

Compartment	Value
Water	30 mg/l
Soil	16,235 mg/kg
Marine water	3 mg/kg
Fresh water	30 mg/l
Fresh water sediment	25,05 mg/kg
Onsite sewage treatment plant	123 mg/l

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

Eye/face protection

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

Skin protection

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 and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	amine-like
c)	Odour Threshold	No data available
d)	pH	6,7
e)	Melting point/freezing point	Melting point/range: -61 °C
f)	Initial boiling point and boiling range	153 °C
g)	Flash point	58 °C - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 15,2 %(V) Lower explosion limit: 2,2 %(V)
k)	Vapour pressure	3,60 hPa at 20 °C 5,16 hPa at 25 °C
l)	Vapour density	2,52 - (Air = 1.0)
m)	Relative density	0,944 g/mL
n)	Water solubility	completely miscible
o)	Partition coefficient: n-octanol/water	log Pow: -1,01
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density 2,52 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 2.800 mg/kg

LC50 Inhalation - Rat - 4 h - 9 - 15 mg/l

LD50 Dermal - Rabbit - 1.500 mg/kg

Skin corrosion/irritation
Skin - Human
Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Moderate eye irritation

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Mouse
lymphocyte
Mutation in mammalian somatic cells.

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (N,N-Dimethylformamide)

Reproductive toxicity
May cause congenital malformation in the fetus.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: LQ2100000

Warning: intolerance for alcohol can occur up to 4 days after dimethylformamide exposure. N,N-dimethylformamide is considered to be a potent liver toxin., Vomiting, Diarrhoea, Abdominal pain, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 9.000 - 13.000 mg/l - 96 h
	LC50 - Lepomis macrochirus (Bluegill) - 6.700 - 7.500 mg/l - 96 h
	LC50 - Pimephales promelas (fathead minnow) - 10.400 - 10.800 mg/l - 96 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 9.800 mg/l - 96 h
	LC50 - Lepomis macrochirus (Bluegill) - 6.300 mg/l - 96 h
	LC50 - Pimephales promelas (fathead minnow) - 10.600 mg/l - 96 h EC50 -
Toxicity to daphnia and other aquatic invertebrates	Daphnia magna (Water flea) - 9.600 - 13.100 mg/l - 48 h
	EC50 - Daphnia magna (Water flea) - 15.700 mg/l - 48 h
Toxicity to algae	LC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 96 h

12.2 Persistence and degradability

Biodegradability Result: > 90 % - Readily biodegradable

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 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.

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 2265 IMDG: 2265 IATA: 2265

14.2 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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

Authorisations and/or restrictions on use

N,N-Dimethylformamide CAS-No.: 68-12-2
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
Toxic for reproduction (article 57c)

N,N-Dimethylformamide CAS-No.: 68-12-2
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)
Toxic to reproduction: category 1B
Restricted to professional users.
See Annex XVII to Regulation (EC) no 1907/2006 for Conditions of restriction

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H312	Harmful in contact with skin.
H312 + H332	Harmful in contact with skin or if inhaled
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H360	May damage fertility or the unborn child.
H360D	May damage the unborn child.
Repr.	Reproductive toxicity

Full text of R-phrases referred to under sections 2 and 3

T	Toxic
R20/21	Harmful by inhalation and in contact with skin.
R36	Irritating to eyes.
R61	May cause harm to the unborn child.
Repr.Cat.2	Toxic to Reproduction Category 2