Material Safety Data Sheet
According to regulation (EC) No. 1907/2006 (REACH)

64780  Dimethylformamide

1. **Identification of the Substance/Mixture and of the Company/Undertaking**

1.1. **Product Identifier**

*Product Name:* Dimethylformamide  
*Article No.:* 64780

1.2. **Relevant identified Uses of the Substance or Mixture and Uses advised against**

*Identified uses:*  
- Industrial application.  
- Manufacture of plastic products.

*Uses advised against:*

1.3. **Details of the Supplier of the Safety Data Sheet (Producer/Importer)**

*Company:* Mon-Droguiste.Com  
*Address:* 39 Bis Rue Du Moulin Rouge - 10150 Charmont Sous Barbuise  
*Tel./Fax.:* Tel +33 (0)3 25 41 04 05 - Fax +33 (0)3 25 41 06 16  
*Internet:* www.mon-droguiste.com  
*EMail:* contact@mon-droguiste.com

*Importer:

1.4. **Emergency No.**

*Emergency No.:* ORFILA : 01 45 42 59 59 - SAMU : 15 - Pompiers : 18 - Médecins de garde : 15

2. **Hazards Identification**

2.1. **Classification of the Substance or Mixture**

*Classification according to EC Regulation 1272/2008*

- Flammable liquids, category 3  
- Acute toxicity (dermal), hazard category 4  
- Serious eye damage, hazard category 2  
- Acute toxicity (inhalation), hazard category 4  
- Reproductive toxicity, category 1B

H226 Flammable liquid and vapour.  
Cat.: 3  
H312 Harmful in contact with skin.  
Cat.: 4  
H319 Causes serious eye irritation.  
Cat.: 2  
H332 Harmful if inhaled.  
Cat.: 4  
H360D May damage the unborn child.  
Cat.: 1B

*Classification according to EC Regulation No. 67/548 or No. 1999/45*

Harmful (Xn)  
R20 Harmful by inhalation.  
R21 Harmful in contact with skin.  
Irritating (Xi)  
R36 Irritating to eyes.  
R61 May cause harm to the unborn child.
Safety Phrases:

Possible Environmental Effects: See Section 12.

2.2. Label Elements

Classification according to EC Regulation 1272/2008

Hazard designation:

- GHS02
- GHS07
- GHS08-2

Signal word: Danger

Hazard designation:

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

Safety designation:

- P201 Obtain special instructions before use.
- P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
- P280 Wear protective gloves/ clothing/ eye/ face protection.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P403+P235 Store in a well ventilated place. Keep cool.

Hazardous components for labelling: 
N,N-Dimethylformamide

2.3. Other Hazards

The results of the PBT and vPvB evaluation can be found in section 12.5.

3. Composition/Information on Ingredients

3.1. Substance

This product is a substance: see details under 3.2.

3.2. Mixture

Chemical Characterization:
Material Safety Data Sheet
According to regulation (EC) No. 1907/2006 (REACH)

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Version: 5.0  Printed: 06.05.2015

Hazardous Ingredients:
N,N-Dimethylformamide (T: R20/21-36-61; H226-312-319-332-360D); REACH 01-2119475605-32-xxxx
100 %
CAS-Nr: 68-12-2
EINECS-Nr: 200-679-5
EC-Nr: 616-001-00-X

Additional information:
This product contains a substance which is on the candidate list according to Article 59 of the REACH Regulation 1907/2006 (1, 10) in a concentration >= 0.1 % (w/w).

4.  First Aid Measures

4.1.  Description of the First Aid Measures

General information:
First aiders have to protect themselves.
Take person away from hazardous area.
Give artificial respiration in case breathing is not regular or if it has stopped.
Remove contaminated clothes immediately.
Intoxication symptoms may occur after several hours, therefore a 48 hour medical observation is necessary.

After inhalation:
Supply fresh air and keep patient calm.
Oxygen therapy in case of impaired breathing.
In case of unconsciousness place patient stable in side position for transportation.
Consult physician immediately.

After skin contact:
Remove contaminated clothing immediately. Wash off immediately with plenty of water and soap.
Get medical attention.

After eye contact:
Rinse open eyes with plenty of water for at least 15 minutes.
Consult physician.

After ingestion:
Do NOT induce vomiting. Consult a doctor.
Rinse mouth with plenty of water and consult physician.

4.2.  Most important Symptoms and Effects, both Acute and Delayed

Symptoms:
Severe eye irritation.

Effects:
Harmful in contact with skin.
Harmful by inhalation.

4.3.  Indication of any Immediate Medical Attention and special Treatment needed

Treatment:
Treat symptomatically.

5.  Fire-Fighting Measures
5.1. Extinguishing Media

Suitable extinguishing media:
Foam, carbon dioxide, extinguishing powder, water, water mist.

Unsuitable extinguishing media:
Water with full jet.

5.2. Special Hazards arising from the Substance or Mixture

Special hazards:
The vapor is heavier than air, spreads along the ground and distant ignition is possible.
Fumes can form an explosive mixture with air.
In case of fire: formation of other toxic decomposition products are also possible.

5.3. Advice for Firefighters

Protective equipment:
Wear self-contained respiratory protective device and protective clothing.

Further information:
Cool closed containers exposed to fire with water mist.
Collect contaminated extinguishing water and debris separately; avoid contamination of sewage system.

6. Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal precautions:
Wear protective clothing.
Ensure adequate ventilation.
Keep away from sources of heat and ignition.
Avoid contact with skin, eyes and clothing. Do not ingest or inhale.

6.2. Environmental Precautions

Environmental precautions:
Prevent contamination of soils, drains and surface water.
Contact local authorities if product pollutes soil or vegetation.

6.3. Methods and Material for Containment and Cleaning Up

Methods and material:
Contain with inert absorbent material (dry sand, vermiculite, active charcoal) and dispose as hazardous waste.

6.4. Reference to other Sections

Protective clothing, see Section 8.

7. Handling and Storage

7.1. Precautions for Safe Handling

Instructions on safe handling:
Keep containers tightly closed.
A nearby eyewash facility should be available for emergencies.
Provide adequate ventilation.
Avoid contact with eyes and skin.
Hygienic measures:

Keep away from foodstuffs and drinks. Do not eat, drink or smoke during work. Wash hands before breaks and at the end of work.
Take off contaminated clothing immediately. Store working clothes separately.
Do not inhale gas/fumes/vapours/aerosols.
Avoid contact with eyes and skin.
Pregnant women and women of childbearing age should avoid contact with this product.

7.2. Conditions for Safe Storage, including any Incompatibilities

Storage conditions:
Store in tightly sealed containers in a cool and well ventilated location.

Requirements for storage areas and containers:
Store in a place which is only accessible to authorized staff.
Store in a room with a solvent-proof floor.
Storage: In the original container.

Information on fire and explosion protection:
Combustible liquid.
Vapors may form an explosive mixture with air. Vapor is heavier than air and spreads along the ground.
Keep away from sources of ignition - do not smoke.
Take measures to prevent static electricity discharge.
Do not store together with combustible and self-ignitable products.
Do not store together with: oxidants.
Do not store together with: foodstuffs, beverages and feed.

Storage class (VCI):
6.1 C: Combustible, acute toxic cat. 3 / toxic products

Further Information:

7.3. Specific End Use(s)

Further information:

8. Exposure Controls/Personal Protection

8.1. Parameters to be Controlled

Parameters to be controlled (DE):
TLV (TRGS 900): 10 ml/m³; 30 mg/m³; Peak limit category 2(II)
Can be absorbed by the skin.
BAT (DE), N-Methylformamide: 35 mg/l (creatinine in urine; end of exposure/shift)

Parameters to be controlled (EC):
TWA (EU ELV): 5 ppm , 15 mg/m³

Derived No-Effect Level (DNEL):
3.31 mg/kg (worker, skin contact, long-term exposition)
15 mg/m³ (worker, inhalation, long-term exposition)
Predicted No-Effect Concentration (PNEC):

- Seawater: 3 mg/l
- Fresh water: 30 mg/l
- Fresh water sediment: 25.05 mg/kg
- Soil: 16.24 mg/l
- Sewage treatment system (STP): 123 mg/kg
- Sporadic release: 30 mg/l

Additional Information:

8.2. Exposure Controls

Technical protective measures:
Provide adequate ventilation.

No further measures, see Section 7 and 8.

Personal Protection

General protective measures:
Remove contaminated clothing immediately.
Keep away from foodstuffs and drinks. Do not eat, drink or smoke during work. Wash hands before breaks and at the end of work.
Do not inhale gas/fumes/vapor/aerosol.

Respiratory protection:
Respiratory equipment required in case of insufficient ventilation, filter type A.

Hand protection:
Protective gloves. The glove material has to be impermeable and resistant to the product / substance / preparation.

Protective glove material:
Butyl rubber (480 min; 0.5 mm).
Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers.

Eye protection:
Tightly fitting safety goggles (EN 166).

Body protection:
Protective clothing.

Environmental precautions:
Prevent contamination of open water ways and sewage system.
Avoid contamination of ground water.
Contact local authorities if large spillages cannot be contained.

9. Physical and Chemical Properties

9.1. Information on Basic Physical and Chemical Properties

- Form: liquid
- Color: colorless
- Odor: characteristic
64780  Dimethylformamide

Odor threshold: No information available.

pH-Value: 6 - 8 (200 g/l; 20°C)

Melting temperature: -61°C

Boiling temperature: 153.1°C

Flash point: 57.5°C (DIN 51755)

Evaporation rate: No information available.

Flammability (solid, gas): not available

Upper explosion limit: 16.0 Vol.-%

Lower explosion limit: 2.2 Vol.-%

Vapor pressure: 3.8 hPa (20°C)

Vapor density: No information available.

Density: 0.95 g/cm³ (20°C)

Solubility in water: completely miscible

Coefficient of variation (n-Octanol/Water): -0.85 logKOW (25°C)

Auto-ignition temperature: 410°C (DIN 51794)

Decomposition temperature: No data available.

Viscosity, dynamic: 0.85 mPa.s (20°C)

Explosive properties: An explosive vapor/air mixture can be formed.

Oxidizing properties: No information available.

Bulk density: not determined

9.2. Further Information

Solubility in solvents:

Viscosity, kinematic

Burning class:

Solvent content:

Solid content:

Particle size:

Other information: Molecular weight: 71.11 g/mol
10. Stability and Reactivity

10.1. Reactivity

No decomposition if used according to specifications.

10.2. Chemical Stability

The product is chemically stable.

10.3. Possibility of Hazardous Reactions

No information available.

10.4. Conditions to Avoid

Conditions to avoid:

Avoid contact with heat, sparks and open fire.

Thermal decomposition:

Avoid heat.

10.5. Incompatible Materials

Keep away from strong oxidizing agents, reducing agents, halogenated compounds, alkali metals.

10.6. Hazardous Decomposition Products

Formaldehyde, dimethylamine.

10.7. Further Information

11. Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

LD50, oral: 3040 mg/kg (rat)
NOEL: 238 mg/kg (rat, oral, 28d)

LD50, dermal:

Harmful after skin contact.

LC50, inhalation:

Harmful if inhaled.

Primary effects

Irritant effect on skin:

Non irritating (rabbit)

Irritant effect on eyes:

Irritating effect (rabbit).

Inhalation:

No information available.

Ingestion:

No information available.

Sensitization:

Not sensitizing (guinea pig; OECD 406).

Mutagenicity:

No mutagenic effects observed in animal tests. Tests with bacteria
Dimethylformamide

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Reproductive toxicity:
Animal studies showed no adverse effect on the fertility.

Cancerogenity:
No data available.

Teratogenicity:
Animal studies showed teratogenic effects.

Specific target organ toxicity (STOT):
Single exposure: no information available.
Repeated exposure: repeated exposure can cause liver damage.

Additional toxicological information:
Risk of skin absorption.
Eye contact: irritating.
Gastrointestinal disorders.

12. Ecological Information

12.1. Aquatic Toxicity

Fish toxicity:
LC50: 7100 mg/l (96h, Lepomis macrochirus)

Daphnia toxicity:
EC50: 13100 mg/l (48h, Daphnia magna; OECD 202)
NOEC: 1500 mg/l (21d, Daphnia magna)

Bacteria toxicity:
EC50: 12300 mg/l (0.08h)

Algae toxicity:
EC50: > 1000 mg/l (72h, Desmodesmus subspicatus)

12.2. Persistency and Degradability

No significant hydrolysis.
100 % (21d); readily biodegradable (OECD 301E)
99 % (7d); readily biodegradable (OECD 302B)

12.3. Bioaccumulation

Bioconcentration factor: 0.3-1.2 (Cyprinus carpio (carp); 56d; 0.020 mg/l)
Bioaccumulation is not to be expected.

12.4. Mobility

Surface tension: 36.42 mN/m (25°C)
Does not evaporate from the surface of the water to the atmosphere.
Not expected to adsorb on soil.

12.5. Results of PBT- und vPvP Assessment

This substance is not classified as PBT (persistent, bioaccumulative, toxic), nor as vPvB (very persistent, very bioaccumulative).

12.6. Other Adverse Effects

Water hazard class:
Behaviour in sewage systems:

Further ecological effects:

Do not let product enter waterways or sewage system.

13. Disposal Considerations

13.1. Waste Treatment Methods

Product: Must be taken to a special waste incineration plant after consulting with the local authorities and after pre-treatment.

European Waste Code (EWC):

Uncleaned packaging: Packaging may be disposed of in the same manner as the product.

14. Transport Information

14.1. UN Number

ADR, IMDG, IATA 2265

14.2. UN Proper Shipping Name

ADR/RID: N,N-DIMETHYLFORMAMID
IMDG/IATA: N,N-DIMETHYLFORMAMIDE

14.3. Transport Hazard Classes

ADR Class: 3
Hazard no.: 3
Classification code: F1
Tunnel no.: D/E
IMDG Class (sea): 3
Hazard no.: 3
EmS No.: F-E, S-D
IATA Class: 3
Hazard no.: 3

14.4. Packaging Group

ADR/RID: III
IMDG: III
IATA: III

14.5. Environmental Hazards

Labelling according 5.2.1.8 ADR/RID: no
Labelling according 5.2.1.6.3 IMDG: no
Classification as environmentally hazardous according 2.9.3
IMDG: no
Labelled with "P" according 2.10 IMDG: no

14. 6. Special Precautions for User
not applicable

14. 7. Transportation in Bulk according to Annex II of MARPOL 73/78 and IBC-Code
IMDG: not applicable

14. 8. Further Information

15. Regulatory Information

15. 1. Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

Water hazard class:
1, slightly hazardous for water

Local regulations on chemical accidents:
Does not underlie the Accident Ordinance.

Employment restrictions:
The employment restrictions for expectant and nursing mothers in accordance with the Maternity Protection Guideline (94/85/EEC) are to be observed.
The employment restrictions for young workers in accordance with the Youth Employment Protection Law (94/33/EC) are to be observed.

Restriction and prohibition of application:
EC. REACH, Section XVII, Restrictions on the Manufacture, Placing on the Market and Use of Certain Dangerous Substances, Preparations and Articles, Registered no. 30
EC RA R2: N,N-Dimethylformamide: 200-679-5; Reproduction Toxicity, Category 1B
Restricted to professional users!

15. 2. Chemical Safety Assessment
A Chemical Safety Assessment has been carried out for this product.

15. 3. Further Information
EINECS (200-679-5), TSCA, AICS (AUS), DSL, INV (CA), ENCS/DCS/JEX/ISHL (JP)(2)-680, KECI (KR) KE-11411, PICCS (PH), NZ CLSC

16. Other Information
This product should be stored, handled and used in accordance with good hygiene practices and in conformity with any legal regulations. This information contained herein is based on the present state of knowledge and is intended to describe our product from the point of view of safety requirements. It should therefore not be construed as guaranteeing specific properties.