

## 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** *N,N-Dimethylformamide, HPLC/Spectro Grade*
- **Article number:** 300078
- **CAS Number:**  
68-12-2
- **EC number:**  
200-679-5
- **Index number:**  
616-001-00-X
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Product safety department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 2 Hazards identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS08 Health hazard

Repr. 1B H360 May damage fertility or the unborn child.



GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2 H319 Causes serious eye irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Toxic

Repr. Cat. 2

May cause harm to the unborn child.



Harmful

Harmful by inhalation and in contact with skin.



Irritant

Irritating to eyes.

- **Information concerning particular hazards for human and environment:** Not applicable.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2013

Reviewed on 01/22/2013

**Trade name:** N,N-Dimethylformamide, HPLC/Spectro Grade

(Contd. of page 1)

- **Label elements**

- **GHS label elements**

The substance is classified and labelled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02    GHS07    GHS08

- **Signal word** *Danger*

- **Hazard-determining components of labelling:**

*N,N-dimethylformamide*

- **Hazard statements**

*Flammable liquid and vapour.*

*Harmful in contact with skin or if inhaled.*

*Causes serious eye irritation.*

*May damage fertility or the unborn child.*

- **Precautionary statements**

*If medical advice is needed, have product container or label at hand.*

*Keep out of reach of children.*

*Read label before use.*

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Additional information:** *Void*

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 2

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = \*2

Fire = 2

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

· **PBT:** *Not applicable.*

· **vPvB:** *Not applicable.*

## 3 Composition/information on ingredients

- **Chemical characterization: Substances**

- **CAS No. Description**

68-12-2 N,N-dimethylformamide

(Contd. on page 3)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2013

Reviewed on 01/22/2013

**Trade name:** N,N-Dimethylformamide, HPLC/Spectro Grade

(Contd. of page 2)

- **Identification number(s)**
- **EC number:** 200-679-5
- **Index number:** 616-001-00-X

- **SVHC**

68-12-2	N,N-dimethylformamide
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## 4 First aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

USA

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2013

Reviewed on 01/22/2013

Trade name: *N,N-Dimethylformamide, HPLC/Spectro Grade*

(Contd. of page 3)

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:** *Keep respiratory protective device available.*
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 15-30 °C
- **Requirements to be met by storerooms and receptacles:** *No special requirements.*
- **Information about storage in one common storage facility:** *Not required.*
- **Further information about storage conditions:**  
*Store in nitrogen.*  
*Keep receptacle tightly sealed.*
- **Specific end use(s)** *No further relevant information available.*

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** *No further data; see item 7.*
- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

### 68-12-2 N,N-dimethylformamide

PEL	30 mg/m <sup>3</sup> , 10 ppm Skin
REL	30 mg/m <sup>3</sup> , 10 ppm Skin
TLV	30 mg/m <sup>3</sup> , 10 ppm Skin; BEI

- **Ingredients with biological limit values:**

### 68-12-2 N,N-dimethylformamide

BEI	15 mg/L urine end of shift N-Methylformamide
	40 mg/L urine prior to last shift of workweek N-Acetyl-S-(N-methylcarbamoyl) cysteine (semi-quantitative)

- **Additional information:** *The lists that were valid during the creation were used as basis.*
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
*Keep away from foodstuffs, beverages and feed.*  
*Immediately remove all soiled and contaminated clothing.*  
*Wash hands before breaks and at the end of work.*  
*Store protective clothing separately.*  
*Avoid contact with the eyes.*  
*Avoid contact with the eyes and skin.*

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2013

Reviewed on 01/22/2013

**Trade name:** N,N-Dimethylformamide, HPLC/Spectro Grade

(Contd. of page 4)

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

<b>Form:</b>	Fluid
<b>Color:</b>	Colorless
<b>Odor:</b>	Amine-like
<b>Odour threshold:</b>	Not determined.

· **pH-value at 20 °C (68 °F):** 7

· **Change in condition**

<b>Melting point/Melting range:</b>	-61 °C (-78 °F)
<b>Boiling point/Boiling range:</b>	152 °C (306 °F)

· **Flash point:** 58 °C (136 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 440 °C (824 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

<b>Lower:</b>	2.2 Vol %
<b>Upper:</b>	16 Vol %

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2013

Reviewed on 01/22/2013

**Trade name:** N,N-Dimethylformamide, HPLC/Spectro Grade

(Contd. of page 5)

- |   |  |
|---|--|
| · <b>Vapor pressure at 20 °C (68 °F):</b>         | 3.5 hPa (3 mm Hg)                          |
| · <b>Density at 20 °C (68 °F):</b>                | 0.95 g/cm <sup>3</sup> (7.928 lbs/gal)     |
| · <b>Relative density</b>                         | Not determined.                            |
| · <b>Vapour density</b>                           | Not determined.                            |
| · <b>Evaporation rate</b>                         | Not determined.                            |
| · <b>Solubility in / Miscibility with Water:</b>  | Fully miscible.                            |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.                            |
| · <b>Viscosity:</b>                               |  |
| · <b>Dynamic:</b>                                 | Not determined.                            |
| · <b>Kinematic:</b>                               | Not determined.                            |
| · <b>Organic solvents:</b>                        | 0.0 %                                      |
| · <b>Other information</b>                        | No further relevant information available. |

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**68-12-2 N,N-dimethylformamide**

Oral	LD50	2800 mg/kg (rat)
Dermal	LD50	4720 mg/kg (rabbit)
Inhalative	LC50/4 h	9400 mg/l (mouse)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

68-12-2 N,N-dimethylformamide

3

· **NTP (National Toxicology Program)**

Substance is not listed.

USA

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2013

Reviewed on 01/22/2013

Trade name: *N,N-Dimethylformamide, HPLC/Spectro Grade*

(Contd. of page 6)



## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** *No further relevant information available.*
- **Persistence and degradability** *No further relevant information available.*
- **Behavior in environmental systems:**
- **Bioaccumulative potential** *No further relevant information available.*
- **Mobility in soil** *No further relevant information available.*
- **Additional ecological information:**
- **General notes:**  
*Water hazard class 1 (Assessment by list): slightly hazardous for water*  
*Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*
- **Other adverse effects** *No further relevant information available.*

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to official regulations.*
- **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

## 14 Transport information

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>                                | <p style="text-align: center;">UN2265</p>   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT, IMDG, IATA</b></li> <li>· <b>ADR</b></li> </ul> | <p style="text-align: center;"><i>N,N-DIMETHYLFORMAMIDE</i><br/>2265 <i>N,N-DIMETHYLFORMAMIDE</i></p> |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>                                |   |
|   |   |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>   | <p style="text-align: center;">3 <i>Flammable liquids.</i><br/>3</p>                                  |
| <ul style="list-style-type: none"> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   |   |
|   |   |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> </ul>   | <p style="text-align: center;">3 <i>Flammable liquids</i></p>   |

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2013

Reviewed on 01/22/2013

Trade name: *N,N-Dimethylformamide, HPLC/Spectro Grade*

(Contd. of page 7)

· <b>Label</b>	3
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Warning: Flammable liquids
· <b>Danger code (Kemler):</b>	30
· <b>EMS Number:</b>	F-E,S-D
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	UN2265, N,N-DIMETHYLFORMAMIDE, 3, III

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

- **Section 355 (extremely hazardous substances):**

Substance is not listed.

- **Section 313 (Specific toxic chemical listings):**

Substance is listed.

- **TSCA (Toxic Substances Control Act):**

Substance is listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**

Substance is not listed.

- **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

- **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

- **Chemicals known to cause developmental toxicity:**

Substance is not listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

Substance is not listed.

- **TLV (Threshold Limit Value established by ACGIH)**

68-12-2 | N,N-dimethylformamide

A4

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

- **GHS label elements**

The substance is classified and labelled according to the Globally Harmonized System (GHS).

(Contd. on page 9)



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 01/22/2013

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**Trade name: N,N-Dimethylformamide, HPLC/Spectro Grade**

(Contd. of page 8)

· **Hazard pictograms**



· **Signal word** *Danger*

· **Hazard-determining components of labelling:**

*N,N-dimethylformamide*

· **Hazard statements**

*Flammable liquid and vapour.*

*Harmful in contact with skin or if inhaled.*

*Causes serious eye irritation.*

*May damage fertility or the unborn child.*

· **Precautionary statements**

*If medical advice is needed, have product container or label at hand.*

*Keep out of reach of children.*

*Read label before use.*

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing MSDS:** *Product safety department*

· **Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*