

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 24.02.2023

Version number 1

Revision: 24.02.2023

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

- **1.1 Product identifier**
- **Trade name:** *N,N-dimethylformamide*
- **Article number:** 141
- **CAS Number:**
68-12-2
- **EC number:**
200-679-5
- **Index number:**
616-001-00-X
- **Registration number** 01-2119475605-32
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** *Chemical.*
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
*Möller Chemie GmbH & Co. KG
Bürgerkamp 1
D-48565 Steinfurt
Tel.: 02551/9340-0
Fax: 02551/9340-60*
- **Further information obtainable from:** *Product safety department*
- **1.4 Emergency telephone number:**
Poison Control Center Mainz - 24 hour emergency service - Tel.: +49 (0) 6131/19240

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS08 health hazard

Repr. 1B H360D May damage 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.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** *Danger*

(Contd. on page 2)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 24.02.2023

Version number 1

Revision: 24.02.2023

Trade name: *N,N*-dimethylformamide

(Contd. of page 1)

- **Hazard statements**

- 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 statements**

- P210 *Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*
- P241 *Use explosion-proof [electrical/ventilating/lighting] equipment.*
- P303+P361+P353 *IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].*
- P305+P351+P338 *IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
- P405 *Store locked up.*
- P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **2.3 Other hazards**

The product does not contain any substance above the legal limits included on the list for endocrine disrupting properties established under Article 59(1) of Regulation (EC) No 1907/2006 or under Commission Delegated Regulation (EU) 2017/2100 or of Commission Regulation (EU) 2018/605 has endocrine disrupting properties.

Vapors can form an explosive mixture with air.

- **Results of PBT and vPvB assessment**

- **PBT:**

The product does not contain any substances above legal limits that meet the criteria for PBT (persistent, bioaccumulative and toxic).

- **vPvB:**

The product does not contain any substances above legal limits that meet the criteria for vPvB (very persistent and very bioaccumulative).

SECTION 3: Composition/information on ingredients

- **3.1 Substances**

- **CAS No. Description**

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

- **Identification number(s)**

- **EC number:** 200-679-5

- **Index number:** 616-001-00-X

- **SVHC**

68-12-2	<i>N,N</i> -dimethylformamide
---------	-------------------------------

SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

- **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Take off contaminated clothing.

- **After eye contact:**

In case of contact with eyes, rinse immediately with plenty of water and consult a doctor.

Remove contact lenses.

- **After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting.

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 24.02.2023

Version number 1

Revision: 24.02.2023

Trade name: N,N-dimethylformamide

(Contd. of page 2)

*Seek medical treatment.***· 4.2 Most important symptoms and effects, both acute and delayed***Irritation of the eyes**Gastric or intestinal disorders**Diarrhoea, nausea, vomiting**Cough, pain, shortness of breath and general difficulty breathing.**Dizziness**Headache**Renal dysfunction**Poisonous effect on the central nervous system, which can cause convulsions, shortness of breath and unconsciousness.***· 4.3 Indication of any immediate medical attention and special treatment needed***No further relevant information available.***SECTION 5: Firefighting measures****· 5.1 Extinguishing media****· Suitable extinguishing agents:** CO₂, powder or water spray. Fight larger fire with alcohol resistant foam.**· For safety reasons unsuitable extinguishing agents:** Water with full jet**· 5.2 Special hazards arising from the substance or mixture***In case of fire, the following can be released:**Carbon monoxide, carbon dioxide**Nitrogen oxides (NO_x)**Irritant gases / vapors***· 5.3 Advice for firefighters***Cool containers with water spray.**Do not inhale explosion gases and fumes**Do not let fire-fighting water get into the canals and bodies of water.***· Protective equipment:** Wear self-contained respiratory protective device.**· Additional information***Collect contaminated fire fighting water separately. It must not enter the sewage system.***SECTION 6: Accidental release measures****· 6.1 Personal precautions, protective equipment and emergency procedures***Avoid contact with eyes and skin**Avoid inhalation.**Keep away from ignition sources.***· 6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.**· 6.3 Methods and material for containment and cleaning up:***Absorb with liquid-binding material (sand, diatomaceous earth, acid binder, universal binder, sawdust).**Dispose contaminated material as waste according to item 13.**Ensure adequate ventilation.***· 6.4 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.***SECTION 7: Handling and storage****· 7.1 Precautions for safe handling***Ensure good ventilation/exhaustion at the workplace.**Open and handle receptacle with care.***· Information about fire - and explosion protection:***Protect against electrostatic charges.*

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 24.02.2023

Version number 1

Revision: 24.02.2023

Trade name: *N,N*-dimethylformamide

(Contd. of page 3)

Keep ignition sources away - Do not smoke.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

Keep container tightly closed and store in a cool, well-ventilated place.

· **Information about storage in one common storage facility:**

Keep away from: oxidizing agents, halogens, permanganates, nitrates

· **Further information about storage conditions:**

Keep container tightly sealed.

Store receptacle in a well ventilated area.

Recommended storage temperature: <50°C

Storage period: 12 months

· **Storage class: 3**

· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

68-12-2 N,N-dimethylformamide

BOELV Short-term value: 30 mg/m³, 10 ppm

Long-term value: 15 mg/m³, 5 ppm

Skin

IOELV Short-term value: 30 mg/m³, 10 ppm

Long-term value: 15 mg/m³, 5 ppm

Skin

· **DNELs**

Worker:

Long-term exposure - systemic effects, dermal: 1.1 mg/kg

Long-term exposure - systemic effects, inhalation: 6 mg/m³

Consumer:

Long-term exposure - systemic effects, oral: 160 µg/kg body weight/day

Long-term exposure - systemic effects, inhalation: 1.1 mg/m³

· **PNECs**

Sediment (fresh water): 111 mg/l

Sediment (seawater): 11.1 mg/kg

Sewage treatment plant: 44 mg/l

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Appropriate engineering controls** No further data; see item 7.

· **Individual protection measures, such as personal protective equipment**

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Hand protection**



Protective gloves

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

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

· **Material of gloves**

Butyl rubber, BR

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 24.02.2023

Version number 1

Revision: 24.02.2023

Trade name: *N,N*-dimethylformamide

(Contd. of page 4)

Isobutene-isoprene rubber

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/face protection**



Tightly sealed goggles

- **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

· Colour:	Colourless
· Odour:	Amine-like
· Odour threshold:	Not determined.
· Melting point/freezing point:	-61 °C
· Boiling point or initial boiling point and boiling range	152-153.5 °C
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	2.2 Vol %
· Upper:	16 Vol %
· Flash point:	57.5 °C (1013 hPa)
· Ignition temperature:	435 °C (1013 hPa)
· Decomposition temperature:	Not determined.
· pH (200 g/l) at 20 °C	7
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic at 20 °C:	0.79-0.92 mPas
· Solubility	
· water:	Soluble.
· Partition coefficient n-octanol/water (log value) at 25 °C	-0.85 log POW
· Vapour pressure at 20 °C:	3.77 hPa
· Density and/or relative density	
· Density at 20 °C:	0.94 g/cm ³
· Relative density at 20 °C	0.94-0.95
· Vapour density	Not determined.

- **9.2 Other information**

· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Auto-ignition temperature:	Not determined.
· Explosive properties:	Not determined.
· Change in condition	
· Evaporation rate	Not determined.

- **Information with regard to physical hazard classes**

· Explosives	Void
· Flammable gases	Void

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 24.02.2023

Version number 1

Revision: 24.02.2023

Trade name: *N,N*-dimethylformamide

(Contd. of page 5)

· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids Flammable liquid and vapour.	
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Dangerous reactions with oxidizing agents, halogen compounds, alkali metals.
- **10.4 Conditions to avoid**
Avoid all sources of ignition: heat, sparks, open flames.
Take precautionary measures against electrostatic discharges.
- **10.5 Incompatible materials:**
Nitrites, nitrates.
Strong oxidizing agents
Acids.
metals
halogens
- **10.6 Hazardous decomposition products:**
Formaldehyde
Amine

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity**
Harmful in contact with skin or if inhaled.

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

Oral	LD50	3.010 mk/kg (rat)
Dermal	LD50	3.160 mg/kg (rat)
Inhalative	LC50/ 4h	5.85 mg/l (rat)

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity**
May damage the unborn child.

(Contd. on page 7)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 24.02.2023

Version number 1

Revision: 24.02.2023

Trade name: *N,N*-dimethylformamide

(Contd. of page 6)

- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
The product does not contain any substance above the legal limits included on the list for endocrine disrupting properties established under Article 59(1) of Regulation (EC) No 1907/2006 or under Commission Delegated Regulation (EU) 2017/2100 or of Commission Regulation (EU) 2018/605 has endocrine disrupting properties.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.


SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:**
LC50/96 h: 7100 mg/l (*Lepomis macrochirus*)
EC50/48 h >13100 mg/l (*Daphnia magna*)
EC50/72 h >1000 mg/l (*Desmodesmus subspicatus*)
- **12.2 Persistence and degradability** Easily biodegradable
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** The product is not considered to be persistent, bioaccumulating nor toxic (PBT).
- **vPvB:** The product is not considered to be persistent or very bioaccumulative (vPvB).
- **12.6 Endocrine disrupting properties** For information on endocrine disrupting properties see section 11.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water
Do not allow product to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Disposal according to local regulations.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---|---|
| <ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA | UN2265 |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA | 2265 <i>N,N</i> -DIMETHYLFORMAMIDE
<i>N,N</i> -DIMETHYLFORMAMIDE |
| <ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR | |
| <div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Class | 3 (F1) Flammable liquids. |

(Contd. on page 8)

Safety data sheet
according to 1907/2006/EC, Article 31


Printing date 24.02.2023

Version number 1

Revision: 24.02.2023

Trade name: *N,N*-dimethylformamide

(Contd. of page 7)

· Label	3
· IMDG, IATA	
	
· Class	3 Flammable liquids.
· Label	3
· 14.4 Packing group · ADR, IMDG, IATA	III
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category	Warning: Flammable liquids. 30 F-E,S-D A
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category · Tunnel restriction code	3 D/E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 2265 <i>N,N</i> -DIMETHYLFORMAMIDE, 3, III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5.000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50.000 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 30, 40, 72, 76
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.

(Contd. on page 9)

EU

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 24.02.2023

Version number 1

Revision: 24.02.2023

Trade name: *N,N*-dimethylformamide

(Contd. of page 8)

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.

· **National regulations:**

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

68-12-2	<i>N,N</i> -dimethylformamide
---------	-------------------------------

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 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 SDS:** Product safety department

· **Contact:** Mrs. Steyer

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Repr. 1B: Reproductive toxicity – Category 1B