

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

Printing date 06.12.2011

Version number 1

Revision: 06.12.2011

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

1.1. Product identifier

- Trade name: Dimethylformamide
- Synonyma DMF; DMFA

SERVA
Electrophoresis

- Article number: 39756
- CAS Number:
68-12-2
- EC number:
200-679-5

- Index number:
616-001-00-X

- 1.2. Relevant identified uses of the substance or mixture and uses advised against
- Application of the substance / the preparation Laboratory chemicals

1.3. Details of the supplier of the safety data sheet

- Manufacturer/Supplier:
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de

- Information department: Product Safety department Tel.: +49 6221 13840-35

- 1.4. Emergency telephone number: +49 6131 19240 (university hospital Mainz)

2 Hazards identification

2.1. Classification of the substance or mixture

- Classification according to Regulation (EC) No 1272/2008



GHS08

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.

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



T; Toxic

Repr. Cat. 2

R61: May cause harm to the unborn child.



Xn; Harmful

R20/21: Harmful by inhalation and in contact with skin.



Xi; Irritant

R36: Irritating to eyes.

- Classification system:

The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

(Contd. on page 2)

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

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Version number 1

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Trade name: Dimethylformamide

(Contd. of page 1)

- **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** GHS07, GHS08
- **Signal word** Danger
- **Hazard statements**
H312 Harmful in contact with skin.
H332 Harmful if inhaled.
H319 Causes serious eye irritation.
H360D May damage the unborn child.
- **Precautionary statements**
P201 Obtain special instructions before use.
P281 Use personal protective equipment as required.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P337+P313 If eye irritation persists: Get medical advice/attention.
- **2.3. Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **3.1. Chemical characterization: Substances**
- **CAS No. Description:**
68-12-2 N,N-dimethylformamide
- **Identification number(s):**
- **EC number:** 200-679-5
- **Index number:** 616-001-00-X
- **Description:**
- **Empirical formula:** C₃H₇N O
- **MW:** 73,1

4 First aid measures

- **4.1. Description of first aid measures**
- **General information**
Remove contaminated clothing.
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 and to be sure call for a doctor.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing.
- **After swallowing** Drink copious amounts of water and provide fresh air. Call for doctor immediately.
- **Information for doctor**
- **4.2. Most important symptoms and effects, both acute and delayed**
Headache
Dizziness
Gastric or intestinal disorders.
Nausea

(Contd. on page 3)

GB

Safety data sheet
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Version number 1

Revision: 06.12.2011

Trade name: Dimethylformamide

(Contd. of page 2)

- **4.3. Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **5.1. Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2. Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
Carbon monoxide and carbon dioxide
- **5.3. Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **6.1. Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **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, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4. Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **7.1. Precautions for safe handling**
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
Open and handle receptacle with care.
- **Information about protection against explosions and fires:**
Keep respiratory protective device available.
Protect against electrostatic charges.
- **7.2. Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:**
Store under lock and key and with access restricted to technical experts or their assistants only.
Keep receptacle tightly sealed.
- **7.3. 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.

(Contd. on page 4)

GB

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

Printing date 06.12.2011

Version number 1

Revision: 06.12.2011

Trade name: Dimethylformamide

(Contd. of page 3)

· 8.1. Control parameters**· Components with limit values that require monitoring at the workplace:****68-12-2 N,N-dimethylformamide (80-100%)**

WEL	Short-term value: 61 mg/m ³ , 20 ppm
	Long-term value: 30 mg/m ³ , 10 ppm
	Sk

· Additional information: The lists that were valid during the creation were used as basis.**· 8.2. 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 and skin.

· Breathing equipment:

Short term filter device:

Filter A/P2.

· Protection of hands:

Rubber gloves

Neoprene 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.

· For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

Butyl rubber, BR

· Eye protection: Tightly sealed goggles.**· Body protection:** Protective work clothing.**9 Physical and chemical properties****· 9.1. Information on basic physical and chemical properties****· General Information****· Appearance:****Form:** Liquid**Colour:** Colourless**· Odour:** Amine-like**· pH-value (200 g/l) at 20°C:** 7**· Change in condition****Melting point/Melting range:** - 61°C**Boiling point/Boiling range:** 153°C**· Flash point:** 58°C

(Contd. on page 5)

GB

Safety data sheet
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Trade name: Dimethylformamide

(Contd. of page 4)

· Ignition temperature:	410°C (DIN 51794)
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Explosion limits:	
Lower:	2.2 Vol %
Upper:	16 Vol %
· Vapour pressure at 20°C:	3.77 hPa
· Density at 20°C:	0.95 g/cm ³
· Solubility in / Miscibility with Water:	Fully miscible
· 9.2. Other information	There are no more data available.

10 Stability and reactivity

- **10.1. Reactivity** No further relevant informations available
- **10.2. Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3. Possibility of hazardous reactions**
Reacts with strong oxidizing agents
Reacts with halogenated compounds
- **10.4. Conditions to avoid** No further relevant information available.
- **10.5. Incompatible materials:** No further relevant information available.
- **10.6. Hazardous decomposition products:**
Nitrogen oxides
Carbon monoxide and carbon dioxide

11 Toxicological information

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

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

Oral	LD50	2000 mg/kg (rat)
Dermal	LD50	4720 mg/kg (rbt)
Inhalative	LC50/4h	5.91 mg/l (rat)
	LC50/96h	6300 mg/l (Fish)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:** Product is suspected to cause damage to the unborn child.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
Repr. 1B

12 Ecological information

- **12.1. Toxicity**

· **Acquatic toxicity:**

EC50/48h	> 100 mg/l (Daphnia magna)
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- **12.2. Persistence and degradability** No further relevant information available.

(Contd. on page 6)

GB

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(Contd. of page 5)

- **Other information:**
OECD 301E, DOC-reduction: degree of elimination 90-100%
The product is easily biodegradable.
- **Behaviour in environmental systems:**
- **12.3. Bioaccumulative potential** Bioconcentrationfactor: 0,3-1,2 (56 d), *Cyprinus carpio* (OECD TG 305 C)
- **12.4. Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** EC50 / 96 h (*Scenedesmus subspicatus*): > 500 mg / l
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (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.
- **12.5. Results of PBT and vPvB assessment**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.
- **12.6. Other adverse effects** No further relevant information available.

* 13 Disposal considerations

- **13.1. 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"> · 14.1. UN-Number · ADR, IMDG, IATA | UN2265 | |
| <ul style="list-style-type: none"> · 14.2. UN proper shipping name · ADR · IMDG · IATA | 2265 N,N-DIMETHYLFORMAMIDE
N,N-DIMETHYLFORMAMIDE
N,N-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 · Label | 3 Flammable liquids.
3 |
| <ul style="list-style-type: none"> · IMDG, IATA | <div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Class · Label | 3 Flammable liquids.
3 |

(Contd. on page 7)

GB

Safety data sheet
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(Contd. of page 6)

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

15 Regulatory information

- **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:**
Employment restrictions concerning pregnant and lactating women must be observed.

- **Technical instructions (air):**

Class	Share in %
NK	80-100

- **Water hazard class:** *Water hazard class 1 (Assessment by list): slightly hazardous for water.*
- **15.2. 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*

- **Contact:** *+49 6221 13840-35*

- **Abbreviations and acronyms:**

PBT: persistent, bioaccumulative, toxic substance (REACH)

vPvB: very persistent, very bioaccumulative substance (REACH)

REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

CLP: Regulation on classification, labelling and packaging of substances and mixtures

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

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

GHS: Globally Harmonized 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- *** Data compared to the previous version altered.**