

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/15/2015

Reviewed on 08/15/2015

1 Identification

- **Product identifier**
- **Trade name:** N,N-Dimethylformamide, 99%
- **Article number:** 26913-03
- **CAS Number:**
68-12-2
- **EC number:**
200-679-5
- **Index number:**
616-001-00-X
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS08 Health hazard

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



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02



GHS07



GHS08

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Trade name: *N,N-Dimethylformamide, 99%*

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- **Signal word** *Danger*

- **Hazard-determining components of labeling:**

N,N-dimethylformamide

- **Hazard statements**

Flammable liquid and vapor.

Causes serious eye irritation.

May damage fertility or the unborn child.

- **Precautionary statements**

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

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

Wear protective gloves / eye protection / face protection.

Wear eye protection / face protection.

Ground/bond container and receiving equipment.

Keep container tightly closed.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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.

IF exposed or concerned: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use for extinction: CO2, powder or water spray.

Store locked up.

Store in a well-ventilated place. Keep cool.

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

- **Classification system:**

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



Health = 1

Fire = 2

Reactivity = 0

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



*Health = *1*

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

- **Identification number(s)**

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

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US

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Trade name: *N,N-Dimethylformamide, 99%*

· **Index number:** 616-001-00-X

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4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **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 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, 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:** No special measures required.

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.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Protect from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.

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- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **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:**
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.
- **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	Long-term value: 30 mg/m ³ , 10 ppm Skin
REL	Long-term value: 30 mg/m ³ , 10 ppm Skin
TLV	Long-term value: 30 mg/m ³ , 10 ppm Skin; BEI

· **Ingredients with biological limit values:**

68-12-2 N,N-dimethylformamide

BEI	15 mg/L Medium: urine Time: end of shift Parameter: N-Methylformamide
	40 mg/L Medium: urine Time: prior to last shift of workweek Parameter: N-Acetyl-S-(N-methylcarbonyl) 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.
- **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:**
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

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Trade name: *N,N-Dimethylformamide, 99%*

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- **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:**

Form:	Liquid
Color:	Colorless
Odor:	Amine-like
Odour threshold:	Not determined.

- **pH-value at 20 °C (68 °F):** 7

- **Change in condition**

Melting point/Melting range:	-61 °C (-78 °F)
Boiling point/Boiling range:	152.5-153.5 °C (307-308 °F)

- **Flash point:** 58 °C (136 °F)

- **Flammability (solid, gaseous):** Not flammable.

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

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.

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

- **Explosion limits:**

Lower:	2.2 Vol %
Upper:	16 Vol %

- **Vapor pressure at 20 °C (68 °F):** 3.5 hPa (3 mm Hg)

- **Density at 20 °C (68 °F):** 0.9505 g/cm³ (7.932 lbs/gal)

- **Relative density** Not determined.

- **Vapour density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

Water: Fully miscible.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

Dynamic at 20 °C (68 °F):	0.802 mPas
Kinematic:	Not determined.

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Organic solvents:	0.0 %
Water:	1.0 %
Other information	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

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- **NTP (National Toxicology Program)**

Substance is not listed.

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

Substance is not listed.

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

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- 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"> · UN-Number · DOT, ADR, IMDG, IATA | <p style="margin-left: 20px;">UN2265</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR · IMDG, IATA | <p style="margin-left: 20px;">N,N-Dimethylformamide
2265 N,N-Dimethylformamide
N,N-DIMETHYLFORMAMIDE</p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | <div style="text-align: center; margin-bottom: 10px;">  </div> <p style="margin-left: 20px;">3 Flammable liquids</p> |
| <ul style="list-style-type: none"> · Class · Label | <p style="margin-left: 20px;">3
3</p> |
| <ul style="list-style-type: none"> · ADR, IMDG, IATA | <div style="text-align: center; margin-bottom: 10px;">  </div> <p style="margin-left: 20px;">3 Flammable liquids</p> |
| <ul style="list-style-type: none"> · Class · Label | <p style="margin-left: 20px;">3
3</p> |
| <ul style="list-style-type: none"> · Packing group · DOT, ADR, IMDG, IATA | <p style="margin-left: 20px;">III</p> |
| <ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: | <p style="margin-left: 20px;">No</p> |
| <ul style="list-style-type: none"> · Special precautions for user · Danger code (Kemler): · EMS Number: | <p style="margin-left: 20px;">Warning: Flammable liquids
30
F-E,S-D</p> |

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- | | |
|--|--|
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | |
| · DOT | |
| · Quantity limitations | On passenger aircraft/rail: 60 L
On cargo aircraft only: 220 L |
| · Hazardous substance: | 100 lbs, 45.4 kg |
| <hr style="border-top: 1px dashed #000;"/> | |
| · ADR | |
| · Excepted quantities (EQ) | Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml |
| <hr style="border-top: 1px dashed #000;"/> | |
| · IMDG | |
| · Limited quantities (LQ) | 5L |
| · Excepted quantities (EQ) | Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml |
| <hr style="border-top: 1px dashed #000;"/> | |
| · UN "Model Regulation": | UN2265, <i>N,N-Dimethylformamide</i> , 3, III |

15 Regulatory information

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

· Section 355 (extremely hazardous substances):	
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Substance is not listed.

· Section 313 (Specific toxic chemical listings):	
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68-12-2 | *N,N-dimethylformamide*

· TSCA (Toxic Substances Control Act):	
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Substance is listed.

· Proposition 65	
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· Chemicals known to cause cancer:	
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Substance is not listed.

· Chemicals known to cause reproductive toxicity for females:	
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Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:	
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Substance is not listed.

· Chemicals known to cause developmental toxicity:	
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Substance is not listed.

· Carcinogenic categories	
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· EPA (Environmental Protection Agency)	
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Substance is not listed.

· TLV (Threshold Limit Value established by ACGIH)	
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68-12-2 | *N,N-dimethylformamide*

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Trade name: *N,N-Dimethylformamide, 99%*

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

Substance is not listed.

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** *Danger*

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

N,N-dimethylformamide

· **Hazard statements**

*Flammable liquid and vapor.**Causes serious eye irritation.**May damage fertility or the unborn child.*

· **Precautionary statements**

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Use explosion-proof electrical/ventilating/lighting/equipment.**Wear protective gloves / eye protection / face protection.**Wear eye protection / face protection.**Ground/bond container and receiving equipment.**Keep container tightly closed.**Use only non-sparking tools.**Take precautionary measures against static discharge.**Wash thoroughly after handling.**Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**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.**IF exposed or concerned: Get medical advice/attention.**If eye irritation persists: Get medical advice/attention.**In case of fire: Use for extinction: CO2, powder or water spray.**Store locked up.**Store in a well-ventilated place. Keep cool.**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.

· **Date of preparation / last revision** 08/15/2015 / -

· **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)

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Trade name: N,N-Dimethylformamide, 99%

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*NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**Flam. Liq. 3: Flammable liquids, Hazard Category 3**Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A**Repr. 1B: Reproductive toxicity, Hazard Category 1B*

US

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

Printing date 15.08.2015

Revision: 15.08.2015

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

· **Product identifier**

· **Trade name:** N,N-Dimethylformamide, 99%

· **Article number:** 26913-03

· **CAS Number:**

68-12-2

· **EC number:**

200-679-5

· **Index number:**

616-001-00-X

· **Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

ProSciTech Pty Ltd

11 Carlton Street, Kirwan QLD 4817 Australia

Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emgrid Australia Pty. Ltd.

P.O. Box 118

The Patch VIC 3792

Australia

Tel: 03 9752 1785

Fax: 03 9752 1784

Website: www.emgrid.com.au

· **Further information obtainable from:** Product safety department

· **Emergency telephone number:**

ChemTrec 1-800-424-9300 Contract CCN7661

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.

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AU

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according to 1907/2006/EC, Article 31

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Trade name: *N,N-Dimethylformamide, 99%*

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GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

· **Label elements**

· **GHS label elements**

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

· **Hazard pictograms**



GHS02

GHS07

GHS08

· **Signal word** *Danger*

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

N,N-dimethylformamide

· **Hazard statements**

Flammable liquid and vapour.

Causes serious eye irritation.

May damage fertility or the unborn child.

· **Precautionary statements**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

Wear protective gloves / eye protection / face protection.

Wear eye protection / face protection.

Ground/bond container and receiving equipment.

Keep container tightly closed.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

IF ON SKIN (or hair): 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.

IF exposed or concerned: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use for extinction: CO2, powder or water spray.

Store locked up.

Store in a well-ventilated place. Keep cool.

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

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** *Not applicable.*

· **vPvB:** *Not applicable.*

AU

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

Printing date 15.08.2015

Revision: 15.08.2015

Trade name: N,N-Dimethylformamide, 99%

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3 Composition/information on ingredients

- **Chemical characterisation: 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	N,N-dimethylformamide
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4 First aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **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:**
CO₂, 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:** No special measures required.

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.

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

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Trade name: *N,N-Dimethylformamide, 99%*

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
Protect from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **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:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

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

68-12-2 N,N-dimethylformamide

NES	Long-term value: 30 mg/m ³ , 10 ppm
Sk	

- **Additional information:** The lists valid during the making 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.
- **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.
- **Protection of hands:**
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.

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Revision: 15.08.2015

Trade name: *N,N*-Dimethylformamide, 99%

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- **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:**

· Form:	Liquid
· Colour:	Colourless
· Odour:	Amine-like
· Odour threshold:	Not determined.

- **pH-value at 20 °C:** 7

- **Change in condition**

· Melting point/Melting range:	-61 °C
· Boiling point/Boiling range:	152.5-153.5 °C

- **Flash point:** 58 °C

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

- **Ignition temperature:** 440 °C

- **Decomposition temperature:** Not determined.

- **Self-igniting:** Not determined.

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

- **Explosion limits:**

· Lower:	2.2 Vol %
· Upper:	16 Vol %

- **Vapour pressure at 20 °C:** 3.5 hPa

· Density at 20 °C:	0.9505 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

- **Solubility in / Miscibility with water:**

Fully miscible.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

· Dynamic at 20 °C:	0.802 mPas
· Kinematic:	Not determined.

- **Solvent content:**

- **Organic solvents:** 0.0 %

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Safety data sheet
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Trade name: *N,N*-Dimethylformamide, 99%

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Water:	1.0 %
VOC (EC)	0.00 %
Other information	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 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:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
Repr. 1B

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour 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 (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.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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Trade name: *N,N-Dimethylformamide, 99%*

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13 Disposal considerations

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

14 Transport information

· UN-Number	
· ADG, IMDG, IATA	UN2265
· UN proper shipping name	
· ADG	2265 N,N-DIMETHYLFORMAMIDE
· IMDG, IATA	N,N-DIMETHYLFORMAMIDE
· Transport hazard class(es)	
· ADG, IMDG, IATA	
· Class	3 Flammable liquids.
· Label	3
· Packing group	
· ADG, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	30
· EMS Number:	F-E,S-D
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	5L

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· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**UN2265, *N,N*-DIMETHYLFORMAMIDE, 3, III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Australian Inventory of Chemical Substances**

Substance is listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**68-12-2 | *N,N*-dimethylformamide

S5, S6

· **GHS label elements**

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

· **Hazard pictograms**

GHS02

GHS07

GHS08

· **Signal word** *Danger*· **Hazard-determining components of labelling:***N,N*-dimethylformamide· **Hazard statements**

Flammable liquid and vapour.

Causes serious eye irritation.

May damage fertility or the unborn child.

· **Precautionary statements**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

Wear protective gloves / eye protection / face protection.

Wear eye protection / face protection.

Ground/bond container and receiving equipment.

Keep container tightly closed.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

IF ON SKIN (or hair): 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.

IF exposed or concerned: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use for extinction: CO₂, powder or water spray.

Store locked up.

Store in a well-ventilated place. Keep cool.

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

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- **Directive 2012/18/EU**
 - **Named dangerous substances - ANNEX I 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 | N,N-dimethylformamide |
|---------|-----------------------|
- **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.

· **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

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Repr. 1B: Reproductive toxicity, Hazard Category 1B

AU

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/15/2015

Reviewed on 08/15/2015

1 Identification

- **Product identifier**
- **Trade name:** N,N-Dimethylformamide, 99%
- **Article number:** 26913-03
- **CAS Number:**
68-12-2
- **EC number:**
200-679-5
- **Index number:**
616-001-00-X
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS08 Health hazard

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



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
Not applicable.



Toxic

Repr. Cat. 2

May impair fertility. May cause harm to the unborn child.



Irritant

Irritating to eyes.

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Trade name: *N,N-Dimethylformamide, 99%*

(Contd. of page 1)

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

· **Label elements**

· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Code letter and hazard designation of product:**



Repr. Cat. 2
Toxic

· **Risk phrases:**

May impair fertility.

May cause harm to the unborn child.

Irritating to eyes.

· **Safety phrases:**

Avoid exposure - obtain special instructions before use.

Keep away from heat.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

· **Hazard description:**

· **WHMIS-symbols:**

B3 - Combustible liquid

D2A - Very toxic material causing other toxic effects



· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 2

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



*Health = *1*

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

· **Identification number(s)**

· **EC number:** *200-679-5*

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Trade name: N,N-Dimethylformamide, 99%

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· **Index number:** 616-001-00-X

· **SVHC**

68-12-2 | N,N-dimethylformamide

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **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 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, 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:** No special measures required.

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.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Protect from heat.

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Trade name: N,N-Dimethylformamide, 99%

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Protect against electrostatic charges.
Keep respiratory protective device available.

- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **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:**
 - Keep receptacle tightly sealed.
 - Protect from heat and direct sunlight.
- **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

EL	Long-term value: 10 ppm Skin
EV	Long-term value: 30 mg/m ³ , 10 ppm Skin

- **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.
- **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:**
 - 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.

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Trade name: *N,N-Dimethylformamide, 99%*

(Contd. of page 4)

· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

· Form:	Liquid
· Color:	Colorless
· Odor:	Amine-like
· Odour threshold:	Not determined.

· **pH-value at 20 °C:** 7· **Change in condition**

· Melting point/Melting range:	-61 °C
· Boiling point/Boiling range:	152.5-153.5 °C

· **Flash point:** 58 °C· **Flammability (solid, gaseous):** Not flammable.· **Ignition temperature:** 440 °C· **Decomposition temperature:** Not determined.· **Auto igniting:** Not determined.· **Danger of explosion:** Not determined.· **Explosion limits:**

· Lower:	2.2 Vol %
· Upper:	16 Vol %

· **Vapor pressure at 20 °C:** 3.5 hPa· **Density at 20 °C:** 0.9505 g/cm³· **Relative density:** Not determined.· **Vapour density:** Not determined.· **Evaporation rate:** Not determined.· **Solubility in / Miscibility with**· **Water:** Fully miscible.· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**

· Dynamic at 20 °C:	0.802 mPas
· Kinematic:	Not determined.
· Organic solvents:	0.0 %
· Water:	1.0 %

· **Other information:** No further relevant information available.

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(Contd. on page 6)

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Reviewed on 08/15/2015

Trade name: N,N-Dimethylformamide, 99%

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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.

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

Substance is not listed.

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.

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Trade name: *N,N-Dimethylformamide, 99%*



(Contd. of page 6)

· **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

- | | |
|---|-----------------------------------|
| · UN-Number | UN2265 |
| · DOT, TDG, IMDG, IATA | UN2265 |
| · UN proper shipping name | <i>N,N-Dimethylformamide</i> |
| · DOT | <i>N,N-Dimethylformamide</i> |
| · TDG | <i>2265 N,N-Dimethylformamide</i> |
| · IMDG, IATA | <i>N,N-DIMETHYLFORMAMIDE</i> |
| · Transport hazard class(es) | |
| · DOT | |
|  | |
| · Class | <i>3 Flammable liquids</i> |
| · Label | <i>3</i> |
| · TDG, IMDG, IATA | |
|  | |
| · Class | <i>3 Flammable liquids</i> |
| · Label | <i>3</i> |
| · Packing group | |
| · DOT, TDG, IMDG, IATA | <i>III</i> |
| · Environmental hazards: | |
| · Marine pollutant: | <i>No</i> |
| · Special precautions for user | <i>Warning: Flammable liquids</i> |
| · Danger code (Kemler): | <i>30</i> |
| · EMS Number: | <i>F-E,S-D</i> |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | <i>Not applicable.</i> |

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Trade name: *N,N-Dimethylformamide, 99%*

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· **Transport/Additional information:**

· **DOT**

· **Quantity limitations**

On passenger aircraft/rail: 60 L

On cargo aircraft only: 220 L

· **Hazardous substance:**

100 lbs, 45.4 kg

· **TDG**

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **IMDG**

· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

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):**

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

· **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)**

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A4

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

Substance is not listed.

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Trade name: N,N-Dimethylformamide, 99%

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· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

Substance is listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

68-12-2 | N,N-dimethylformamide

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**



Repr. Cat. 2
Toxic

· **Risk phrases:**

May impair fertility.

May cause harm to the unborn child.

Irritating to eyes.

· **Safety phrases:**

Avoid exposure - obtain special instructions before use.

Keep away from heat.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

· **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.

· **Date of preparation / last revision** 08/15/2015 / -

· **Abbreviations and acronyms:**

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)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Repr. 1B: Reproductive toxicity, Hazard Category 1B

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

Printing date 15.08.2015

Revision: 15.08.2015

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

· **1.1 Product identifier**

· **Trade name:** N,N-Dimethylformamide, 99%

· **Article number:** 26913-03

· **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**

No further relevant information available.

· **Application of the substance / the mixture** Laboratory chemicals

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

· **Further information obtainable from:** Product safety department

· **1.4 Emergency telephone number:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

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

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.

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Safety data sheet

according to 1907/2006/EC, Article 31

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Trade name: *N,N*-Dimethylformamide, 99%

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· **Hazard pictograms**

GHS02 GHS07 GHS08

· **Signal word** *Danger*· **Hazard-determining components of labelling:***N,N*-dimethylformamide· **Hazard statements**H226 *Flammable liquid and vapour.*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/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**· **Results of PBT and vPvB assessment**· **PBT:** *Not applicable.*· **vPvB:** *Not applicable.*

SECTION 3: Composition/information on ingredients

· **3.1 Chemical characterisation: 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 | *N,N*-dimethylformamide

SECTION 4: First aid measures

· **4.1 Description of first aid measures**· **After inhalation:** *Supply fresh air; consult doctor in case of complaints.*· **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.*· **4.2 Most important symptoms and effects, both acute and delayed** *No further relevant information available.*

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- **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 fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** *No further relevant information available.*
- **5.3 Advice for firefighters**
- **Protective equipment:** *No special measures required.*

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** *Not required.*
- **6.2 Environmental precautions:**
Dilute with plenty of water.
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 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.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
Protect from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **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:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** *No further relevant information available.*

SECTION 8: Exposure controls/personal protection

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

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· **8.1 Control parameters**· **Ingredients with limit values that require monitoring at the workplace:****68-12-2 N,N-dimethylformamide**

WEL	Short-term value: 30 mg/m ³ , 10 ppm
	Long-term value: 15 mg/m ³ , 5 ppm
Sk	

· **Additional information:** The lists valid during the making 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.

Avoid contact with the eyes and skin.

· **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.

· **Protection of hands:**

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

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**· **General Information**· **Appearance:****Form:** Liquid**Colour:** Colourless· **Odour:** Amine-like· **Odour threshold:** Not determined.· **pH-value at 20 °C:** 7· **Change in condition****Melting point/Melting range:** -61 °C

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Boiling point/Boiling range:	152.5-153.5 °C
· Flash point:	58 °C
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	440 °C
· Decomposition temperature:	Not determined.
· Self-igniting:	Not determined.
· Danger of explosion:	Not determined.
· Explosion limits:	
Lower:	2.2 Vol %
Upper:	16 Vol %
· Vapour pressure at 20 °C:	3.5 hPa
· Density at 20 °C:	0.9505 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C:	0.802 mPas
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	0.0 %
Water:	1.0 %
VOC (EC)	0.00 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

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

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

68-12-2 N,N-dimethylformamide

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

- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Repr. 1B

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **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:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

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

SECTION 14: Transport information

- | | |
|---------------------------------------|----------------------------|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | UN2265 |
| · 14.2 UN proper shipping name | |
| · ADR | 2265 N,N-DIMETHYLFORMAMIDE |
| · IMDG, IATA | N,N-DIMETHYLFORMAMIDE |

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· **14.3 Transport hazard class(es)**· **ADR, 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** Warning: *Flammable liquids.*· **Danger code (Kemler):** 30· **EMS Number:** 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**· **Limited quantities (LQ)** 5L· **Excepted quantities (EQ)** Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **Transport category** 3· **Tunnel restriction code** D/E· **IMDG**· **Limited quantities (LQ)** 5L· **Excepted quantities (EQ)** Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

UN2265, N,N-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.· **National regulations:**· **Other regulations, limitations and prohibitive regulations**· **Substances of very high concern (SVHC) according to REACH, Article 57**

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

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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.

· 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

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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Repr. 1B: Reproductive toxicity, Hazard Category 1B

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RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

· 1.1 Productidentificatie

· **Handelsnaam:** N,N-Dimethylformamide, 99%

· **Artikelnummer:** 26913-03

· **CAS-nummer:**

68-12-2

· **EC-nummer:**

200-679-5

· **Catalogusnummer:**

616-001-00-X

· 1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik

Geen verdere relevante informatie verkrijgbaar.

· **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën

· 1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad

· **Fabrikant/leverancier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Aurion

Binnenhaven 5

6709 PD Wageningen

The Netherlands

Tel: 31 317 415094

Fax: 31 317 415955

email: info@aurion.nl

· **Inlichtingengevende sector:** Product safety department

· 1.4 Telefoonnummer voor noodgevallen:

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

RUBRIEK 2: Identificatie van de gevaren

· 2.1 Indeling van de stof of het mengsel

· **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



GHS02 vlam

Flam. Liq. 3 H226 Ontvlambare vloeistof en damp.



GHS08 gezondheidsgevaar

Repr. 1B H360D Kan het ongeboren kind schaden.



GHS07

Eye Irrit. 2 H319 Veroorzaakt ernstige oogirritatie.

(Vervolg op blz. 2)

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- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



GHS02 GHS07 GHS08

- **Signaalwoord** Gevaar
- **Gevaaraanduidende componenten voor de etikettering:**
N,N-dimethylformamide
- **Gevenaanduidingen**
H226 Ontvlambare vloeistof en damp.
H319 Veroorzaakt ernstige oogirritatie.
H360D Kan het ongeboren kind schaden.
- **Veiligheidsaanbevelingen**
P210 Verwijderd houden van warmte, hete oppervlakken, vonken, open vuur en andere ontstekingsbronnen. Niet roken.
P241 Explosieveilige elektrische/ventilatie-/verlichtings- apparatuur gebruiken.
P303+P361+P353 BIJ CONTACT MET DE HUID (of het haar): verontreinigde kleding onmiddellijk uittrekken. Huid met water afspoelen/afdouchen.
P305+P351+P338 BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.
P405 Achter slot bewaren.
P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.
- **2.3 Andere gevaren**
- **Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.1 Chemische karakterisering: Stoffen**
- **CAS-Nr. omschrijving**
68-12-2 *N,N*-dimethylformamide
- **Identificatienummer(s)**
- **EC-nummer:** 200-679-5
- **Catalogusnummer:** 616-001-00-X

· SVHC

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

RUBRIEK 4: Eerstehulpmaatregelen

- **4.1 Beschrijving van de eerstehulpmaatregelen**
- **Na het inademen:** Frisse lucht toedienen; bij klachten arts ontbieden.
- **Na huidcontact:** Over het algemeen is het produkt niet prikkelend voor de huid

(Vervolg op blz. 3)

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- **Na oogcontact:**
De ogen gedurende verscheidene minuten onder stromend water afspoelen terwijl de oogspleet geopend blijft. Bij aanhoudende klachten een dokter raadplegen.
- **Na inslikken:** *Als de klachten niet minderen, een arts raadplegen*
- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** *Geen verdere relevante informatie verkrijgbaar.*
- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**
Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**
- **Geschikte blusmiddelen:**
CO₂, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.
- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**
Geen verdere relevante informatie verkrijgbaar.
- **5.3 Advies voor brandweerlieden**
- **Speciale beschermende kleding:** *Geen bijzondere maatregelen nodig.*

RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures** *Niet nodig.*
- **6.2 Milieuvoorzorgsmaatregelen:**
*Met veel water verdunnen.
Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.*
- **6.3 Insluutings- en reinigingsmethoden en -materiaal:**
*Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.
Besmet materiaal zoals afval volgens punt 13 verwijderen.
Voor voldoende ventilatie zorgen.*
- **6.4 Verwijzing naar andere rubrieken**
*Informatie inzake veilig gebruik - zie hoofdstuk 7.
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.
Informatie inzake berging - zie hoofdstuk 13.*

RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**
*Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.
Tanks voorzichtig openen en behandelen.
Aërosolvorming vermijden.*
- **Informatie m.b.t. brand- en ontploffingsgevaar:**
*Beschermen tegen hitte.
Maatregelen treffen tegen ontlading van statische elektriciteit.
Ademhalingstoestellen gereedhouden.*
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** *Geen bijzondere eisen.*
- **Informatie m.b.t. gezamenlijke opslag:** *Niet noodzakelijk.*
- **Verdere inlichtingen over eisen m.b.t. de opslag:**
*Tanks ondoordringbaar gesloten houden.
Tegen hitte en directe zonnestralen beschermen.*

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· 7.3 Specifiek eindgebruik Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

· Aanvullende gegevens m.b.t. de inrichting van technische installaties: Geen aanvullende gegevens. Zie 7.

· 8.1 Controleparameters

· Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:

68-12-2 N,N-dimethylformamide

WGW	Korte termijn waarde: 30 mg/m ³ , 10 ppm
	Lange termijn waarde: 15 mg/m ³ , 5 ppm

· Aanvullende gegevens: Als basis dienden lijsten die bij opstelling geldig waren.

· 8.2 Maatregelen ter beheersing van blootstelling

· Persoonlijke beschermingsvoorzieningen:

· Algemene beschermings- en gezondheidsmaatregelen:

- Verwijderd houden van eet- en drinkwaren.
- Verontreinigde kleding onmiddellijk uittrekken.
- Vóór de pauze en aan het einde van werktijd handen wassen.
- Beschermende kleding afzonderlijk bewaren.
- Aanraking met de ogen vermijden.
- Aanraking met de ogen en de huid vermijden.

· Ademhalingsbescherming:

Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingstoestel gebruiken.

· Handbescherming:

Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.
Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

· Handschoenmateriaal

De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.

· Doordringingstijd van het handschoenmateriaal

De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

· Oogbescherming:



Nauw aansluitende veiligheidsbril

RUBRIEK 9: Fysische en chemische eigenschappen

· 9.1 Informatie over fysische en chemische basiseigenschappen

· Algemene gegevens

· Voorkomen:

Vorm:	Vloeistof
Kleur:	Kleurloos
Reuk:	Amine-achtig
Geurdrempelwaarde:	Niet bepaald.

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· <i>pH</i> -waarde bij 20 °C:	7
· Toestandsverandering Smeltpunt/smeltbereik:	-61 °C
Kookpunt/kookpuntbereik:	152,5-153,5 °C
· Vlampunt:	58 °C
· Ontvlambaarheid (vast, gasvormig):	Niet bruikbaar.
· Ontstekingstemperatuur:	440 °C
· Ontbindingstemperatuur:	Niet bepaald.
· Zelfonsteking:	Niet bepaald.
· Ontploffingsgevaar:	Niet bepaald.
· Ontploffingsgrenzen: Onderste:	2,2 Vol %
Bovenste:	16 Vol %
· Dampspanning bij 20 °C:	3,5 hPa
· Dichtheid bij 20 °C:	0,9505 g/cm ³
· Relatieve dichtheid	Niet bepaald.
· Dampdichtheid	Niet bepaald.
· Verdampingsnelheid	Niet bepaald.
· Oplosbaarheid in/mengbaarheid met Water:	Volledig mengbaar.
· Verdelingscoëfficiënt (n-octanol/water):	Niet bepaald.
· Viscositeit Dynamisch bij 20 °C:	0,802 mPas
Kinematisch:	Niet bepaald.
· Oplosmiddelgehalte: Organisch oplosmiddel:	0,0 %
Water:	1,0 %
VOC (EG)	0,00 %
· 9.2 Overige informatie	Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit**
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontledingsproducten bekend.

NL

(Vervolg op blz. 6)

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RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit**

- **Indelingsrelevantie LD/LC50-waarden:**

68-12-2 N,N-dimethylformamide

Oraal	LD50	2800 mg/kg (rat)
Dermaal	LD50	4720 mg/kg (rabbit)
Inhalatief	LC50/4 h	9400 mg/l (mouse)

- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Geen prikkelend effect.
- **Ernstig oogletsel/oogirritatie** Prikkeling
- **Sensibilisatie van de luchtwegen/de huid** Geen effect van overgevoeligheid bekend.
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
Repr. 1B

RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**
Waterbezwaarlijkheid (NL) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.
Gevaar voor water klasse 1 (D) (Lijstclassificatie): gevaar voor water klein
Niet onverdund of in grote hoeveelheden lozen in grondwater, in oppervlaktewater of in de riolering.
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.
- **Aanbevolen reinigingsmiddel:** Water, eventueel met toevoeging van reinigingsmiddelen.

RUBRIEK 14: Informatie met betrekking tot het vervoer

- **14.1 VN-nummer**
- **ADR, IMDG, IATA** UN2265
- **14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN**
- **ADR** 2265 N,N-DIMETHYLFORMAMIDE

(Vervolg op blz. 7)

Veiligheidsinformatieblad


volgens 1907/2006/EG, Artikel 31

datum van de druk: 15.08.2015

Herziening van: 15.08.2015

Handelsnaam: *N,N-Dimethylformamide, 99%*

(Vervolg van blz. 6)

· IMDG, IATA	<i>N,N-DIMETHYLFORMAMIDE</i>
· 14.3 Transportgevarenklasse(n)	
· ADR, IMDG, IATA	
	
· klasse	3 Brandbare vloeistoffen
· Etiket	3
· 14.4 Verpakkingsgroep:	
· ADR, IMDG, IATA	III
· 14.5 Milieugevaren:	
· Marine pollutant:	Neen
· 14.6 Bijzondere voorzorgen voor de gebruiker	Waarschuwing: Brandbare vloeistoffen
· Kemler-getal:	30
· EMS-nummer:	F-E,S-D
· 14.7 Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 en de IBC-code	Niet bruikbaar.
· Transport/verdere gegevens:	
· ADR	
· Beperkte hoeveelheden (LQ)	5L
· Uitgezonderde hoeveelheden (EQ)	Code: E1 Grootste netto hoeveelheid per binnenverpakking: 30 ml Grootste netto hoeveelheid per buitenverpakking: 1000 ml
· Vervoerscategorie	3
· Tunnelbeperkingscode	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· VN "Model Regulation":	UN2265, <i>N,N-DIMETHYLFORMAMIDE</i> , 3, III

RUBRIEK 15: Regelgeving

· **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**· **SZW-lijst van kankerverwekkende stoffen**

De stof is niet aanwezig.

· **SZW-lijst van mutagene stoffen**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**68-12-2 | *N,N-dimethylformamide*

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(Vervolg op blz. 8)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 15.08.2015

Herziening van: 15.08.2015

Handelsnaam: N,N-Dimethylformamide, 99%

(Vervolg van blz. 7)

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

De stof is niet aanwezig.

· **Richtlijn 2012/18/EU**

· **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.

· **Nationale voorschriften:**

· **Gevaarklasse v. water:** Waterbezwaarlijkheid (NL) 10: Saneringsinspanning A

· **Aanvullende voorschriften, beperkingen en verbodsverordeningen**

· **Zeer zorgwekkende stoffen (SVHC) volgens REACH, artikel 57**

68-12-2 | N,N-dimethylformamide

· **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

· **Afkortingen en acroniemen:**

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

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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Repr. 1B: Reproductive toxicity, Hazard Category 1B

Fiche de données de sécurité

selon 1907/2006/CE, Article 31

Date d'impression : 15.08.2015

Révision: 15.08.2015

SECTION 1: Identification de la substance/du mélange et de la société/l'entreprise

· 1.1 Identificateur de produit

· **Nom du produit:** N,N-Dimethylformamide, 99%

· **Code du produit:** 26913-03

· **No CAS:**

68-12-2

· **Numéro CE:**

200-679-5

· **Numéro index:**

616-001-00-X

· **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**

Pas d'autres informations importantes disponibles.

· **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires

· **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**

· **Producteur/fournisseur:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

· **Service chargé des renseignements:** Product safety department

· **1.4 Numéro d'appel d'urgence:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SECTION 2: Identification des dangers

· **2.1 Classification de la substance ou du mélange**

· **Classification selon le règlement (CE) n° 1272/2008**



GHS02 flamme

Flam. Liq. 3 H226 Liquide et vapeurs inflammables.



GHS08 danger pour la santé

Repr. 1B H360D Peut nuire au fœtus.



GHS07

Eye Irrit. 2 H319 Provoque une sévère irritation des yeux.

· **2.2 Éléments d'étiquetage**

· **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.

(suite page 2)

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Nom du produit: *N,N-Diméthylformamide, 99%*

(suite de la page 1)

· Pictogrammes de danger



· Mention d'avertissement *Danger*

· Composants dangereux déterminants pour l'étiquetage:

N,N-diméthylformamide

· Mentions de danger

H226 *Liquide et vapeurs inflammables.*

H319 *Provoque une sévère irritation des yeux.*

H360D *Peut nuire au fœtus.*

· Conseils de prudence

P210 *Tenir à l'écart de la chaleur, des surfaces chaudes, des étincelles, des flammes nues et de toute autre source d'inflammation. Ne pas fumer.*

P241 *Utiliser du matériel électrique/de ventilation/d'éclairage/antidéflagrant.*

P303+P361+P353 *EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau/Se doucher.*

P305+P351+P338 *EN CAS DE CONTACT AVEC LES YEUX: rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.*

P405 *Garder sous clef.*

P501 *Éliminer le contenu/réceptacle conformément à la réglementation locale/régionale/nationale/internationale.*

· 2.3 Autres dangers

· Résultats des évaluations PBT et vPvB

· **PBT:** Non applicable.

· **vPvB:** Non applicable.

SECTION 3: Composition/informations sur les composants

· 3.1 Caractérisation chimique: Substances

· No CAS Désignation

68-12-2 *N,N-diméthylformamide*

· Code(s) d'identification

· Numéro CE: 200-679-5

· Numéro index: 616-001-00-X

· SVHC

68-12-2	<i>N,N-diméthylformamide</i>
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SECTION 4: Premiers secours

· 4.1 Description des premiers secours

· **Après inhalation:** Donner de l'air frais, consulter un médecin en cas de troubles.

· **Après contact avec la peau:** En règle générale, le produit n'irrite pas la peau.

· Après contact avec les yeux:

Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières. Si les troubles persistent, consulter un médecin.

· **Après ingestion:** Si les troubles persistent, consulter un médecin.

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- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**
Pas d'autres informations importantes disponibles.

SECTION 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:**
CO₂, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
- **5.2 Dangers particuliers résultant de la substance ou du mélange**
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** *Aucune mesure particulière n'est requise.*

SECTION 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence** *Pas nécessaire.*
- **6.2 Précautions pour la protection de l'environnement:**
*Diluer avec beaucoup d'eau.
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.*
- **6.3 Méthodes et matériel de confinement et de nettoyage:**
*Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).
Evacuer les matériaux contaminés en tant que déchets conformément au point 13.
Assurer une aération suffisante.*
- **6.4 Référence à d'autres sections**
*Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.
Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.*

SECTION 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**
*Veiller à une bonne ventilation/aspiration du poste de travail.
Ouvrir et manipuler les récipients avec précaution.
Eviter la formation d'aérosols.*
- **Préventions des incendies et des explosions:**
*Tenir à l'abri de la chaleur.
Prendre des mesures contre les charges électrostatiques.
Tenir des appareils de protection respiratoire prêts.*
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** *Aucune exigence particulière.*
- **Indications concernant le stockage commun:** *Pas nécessaire.*
- **Autres indications sur les conditions de stockage:**
*Tenir les emballages hermétiquement fermés.
Protéger de la forte chaleur et du rayonnement direct du soleil.*
- **7.3 Utilisation(s) finale(s) particulière(s)** *Pas d'autres informations importantes disponibles.*

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SECTION 8: Contrôles de l'exposition/protection individuelle

· **Indications complémentaires pour l'agencement des installations techniques:**

Sans autre indication, voir point 7.

· **8.1 Paramètres de contrôle**

· **Composants présentant des valeurs-seuil à surveiller par poste de travail:**

68-12-2 N,N-diméthylformamide

VME	Valeur momentanée: 30 mg/m ³ , 10 ppm Valeur à long terme: 15 mg/m ³ , 5 ppm R1B, Risque de pénétration percutanée
-----	--

· **Remarques supplémentaires:**

Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.

· **8.2 Contrôles de l'exposition**

· **Équipement de protection individuel:**

· **Mesures générales de protection et d'hygiène:**

Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.

Retirer immédiatement les vêtements souillés ou humectés.

Se laver les mains avant les pauses et en fin de travail.

Conserver à part les vêtements de protection.

Éviter tout contact avec les yeux.

Éviter tout contact avec les yeux et avec la peau.

· **Protection respiratoire:**

En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.

· **Protection des mains:**

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.

À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.

Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

· **Matériau des gants**

Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.

· **Temps de pénétration du matériau des gants**

Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

· **Protection des yeux:**



Lunettes de protection hermétiques

SECTION 9: Propriétés physiques et chimiques

· **9.1 Informations sur les propriétés physiques et chimiques essentielles**

· **Indications générales**

· **Aspect:**

Forme: Liquide

Couleur: Incolore

· **Odeur:** Aminée

· **Seuil olfactif:** Non déterminé.

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· valeur du pH à 20 °C:	7
· Changement d'état	
Point de fusion:	-61 °C
Point d'ébullition:	152,5-153,5 °C
· Point d'éclair	58 °C
· Inflammabilité (solide, gazeux):	Non applicable.
· Température d'inflammation:	440 °C
· Température de décomposition:	Non déterminé.
· Auto-inflammation:	Non déterminé.
· Danger d'explosion:	Non déterminé.
· Limites d'explosion:	
Inférieure:	2,2 Vol %
Supérieure:	16 Vol %
· Pression de vapeur à 20 °C:	3,5 hPa
· Densité à 20 °C:	0,9505 g/cm ³
· Densité relative	Non déterminé.
· Densité de vapeur.	Non déterminé.
· Vitesse d'évaporation	Non déterminé.
· Solubilité dans/miscibilité avec l'eau:	Entièrement miscible
· Coefficient de partage (n-octanol/eau):	Non déterminé.
· Viscosité:	
Dynamique à 20 °C:	0,802 mPas
Cinématique:	Non déterminé.
· Teneur en solvants:	
Solvants organiques:	0,0 %
Eau:	1,0 %
VOC (CE)	0,00 %
· 9.2 Autres informations	Pas d'autres informations importantes disponibles.

SECTION 10: Stabilité et réactivité

- 10.1 Réactivité
- 10.2 Stabilité chimique
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- 10.3 Possibilité de réactions dangereuses Aucune réaction dangereuse connue.
- 10.4 Conditions à éviter Pas d'autres informations importantes disponibles.
- 10.5 Matières incompatibles: Pas d'autres informations importantes disponibles.
- 10.6 Produits de décomposition dangereux: Pas de produits de décomposition dangereux connus

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(suite page 6)

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SECTION 11: Informations toxicologiques

· 11.1 Informations sur les effets toxicologiques

· Toxicité aiguë

· Valeurs LD/LC50 déterminantes pour la classification:

68-12-2 N,N-diméthylformamide

Oral	LD50	2800 mg/kg (rat)
Dermique	LD50	4720 mg/kg (lapin)
Inhalatoire	LC50/4 h	9400 mg/l (souris)

· Effet primaire d'irritation:

- **Corrosion cutanée/irritation cutanée** Pas d'effet d'irritation.
- **Lésions oculaires graves/irritation oculaire** Effet d'irritation.
- **Sensibilisation respiratoire ou cutanée** Aucun effet de sensibilisation connu.
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**
Repr. 1B

SECTION 12: Informations écologiques

· 12.1 Toxicité

- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.

· Autres indications écologiques:

· Indications générales:

Catégorie de pollution des eaux 1 (D) (classification selon liste): peu polluant

Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.

· 12.5 Résultats des évaluations PBT et VPVB

- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

SECTION 13: Considérations relatives à l'élimination

· 13.1 Méthodes de traitement des déchets

- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.

· Emballages non nettoyés:

- **Recommandation:** Evacuation conformément aux prescriptions légales.
- **Produit de nettoyage recommandé:** Eau, éventuellement avec des produits de nettoyage

SECTION 14: Informations relatives au transport

· 14.1 No ONU

- **ADR, IMDG, IATA** UN2265

· 14.2 Nom d'expédition des Nations unies

- **ADR** 2265 N,N-DIMÉTHYLFORMAMIDE

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· IMDG, IATA	<i>N,N-DIMETHYLFORMAMIDE</i>
· 14.3 Classe(s) de danger pour le transport	
· ADR, IMDG, IATA	
	
· Classe	3 Liquides inflammables.
· Étiquette	3
· 14.4 Groupe d'emballage	
· ADR, IMDG, IATA	III
· 14.5 Dangers pour l'environnement:	
· Marine Pollutant:	Non
· 14.6 Précautions particulières à prendre par l'utilisateur	Attention: Liquides inflammables.
· Indice Kemler:	30
· No EMS:	F-E,S-D
· 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC	Non applicable.
· Indications complémentaires de transport:	
· ADR	
· Quantités limitées (LQ)	5L
· Quantités exceptées (EQ)	Code: E1 Quantité maximale nette par emballage intérieur: 30 ml Quantité maximale nette par emballage extérieur: 1000 ml
· Catégorie de transport	3
· Code de restriction en tunnels	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· "Règlement type" de l'ONU:	UN2265, N,N-DIMÉTHYLFORMAMIDE, 3, III

SECTION 15: Informations réglementaires

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- **Directive 2012/18/UE**
- **Substances dangereuses désignées - ANNEXE I** la substance n'est pas comprise
- **Prescriptions nationales:**
- **Autres prescriptions, restrictions et règlements d'interdiction**
- **Substances extrêmement préoccupantes (SVHC) selon REACH, article 57**

68-12-2 *N,N-diméthylformamide*

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(suite de la page 7)

· **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

SECTION 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

· **Acronymes et abréviations:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route

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)

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LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

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Sicherheitsdatenblatt

gemäß 1907/2006/EG, Artikel 31

Druckdatum: 15.08.2015

überarbeitet am: 15.08.2015

ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

· **1.1 Produktidentifikator**

· **Handelsname:** *N,N-Dimethylformamide, 99%*

· **Artikelnummer:** 26913-03

· **CAS-Nummer:**

68-12-2

· **EG-Nummer:**

200-679-5

· **Indexnummer:**

616-001-00-X

· **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**

Keine weiteren relevanten Informationen verfügbar.

· **Verwendung des Stoffes / des Gemisches** Laborchemikalien

· **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**

· **Hersteller/Lieferant:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Science Services GmbH

Unterhachinger Str. 75

81737 München Germany

Tel: +49(0)89 18 93 668-0

safety@scienceservices.de

24h Giftnotruf Munchen: +49 (0)89 19240

Toxikologische Abteilung der II. Medizinischen Klinik

rechts der Isar, Munchen. - www.toxinfo.org

· **Auskunftgebender Bereich:** *Product safety department*

· **1.4 Notrufnummer:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

ABSCHNITT 2: Mögliche Gefahren

· **2.1 Einstufung des Stoffs oder Gemischs**

· **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

Flam. Liq. 3 H226 Flüssigkeit und Dampf entzündbar.



GHS08 Gesundheitsgefahr

Repr. 1B H360D Kann das Kind im Mutterleib schädigen.

(Fortsetzung auf Seite 2)

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gemäß 1907/2006/EG, Artikel 31

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Handelsname: N,N-Dimethylformamide, 99%

(Fortsetzung von Seite 1)



GHS07

Eye Irrit. 2 H319 Verursacht schwere Augenreizung.

· 2.2 Kennzeichnungselemente

- **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**
Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.
- **Gefahrenpiktogramme**



GHS02

GHS07

GHS08

· **Signalwort Gefahr**

· **Gefahrbestimmende Komponenten zur Etikettierung:**

N,N-Dimethylformamid

· **Gefahrenhinweise**

- H226 Flüssigkeit und Dampf entzündbar.*
- H319 Verursacht schwere Augenreizung.*
- H360D Kann das Kind im Mutterleib schädigen.*

· **Sicherheitshinweise**

- P210 Von Hitze, heißen Oberflächen, Funken, offenen Flammen und anderen Zündquellen fernhalten. Nicht rauchen.*
- P241 Explosionsgeschützte elektrische Geräte/Lüftungsanlagen/Beleuchtungsanlagen verwenden.*
- P303+P361+P353 BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen/duschen.*
- P305+P351+P338 BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser spülen. Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter spülen.*
- P405 Unter Verschluss aufbewahren.*
- P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.*

· **Zusätzliche Angaben:**

Nur für gewerbliche Anwender.

· 2.3 Sonstige Gefahren

· **Ergebnisse der PBT- und vPvB-Beurteilung**

- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

· 3.1 Chemische Charakterisierung: Stoffe

- **CAS-Nr. Bezeichnung**
68-12-2 N,N-Dimethylformamid
- **Identifikationsnummer(n)**
- **EG-Nummer:** 200-679-5
- **Indexnummer:** 616-001-00-X

(Fortsetzung auf Seite 3)

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(Fortsetzung von Seite 2)

· **SVHC**

68-12-2 | *N,N-Dimethylformamid*

ABSCHNITT 4: Erste-Hilfe-Maßnahmen

- **4.1 Beschreibung der Erste-Hilfe-Maßnahmen**
- **Nach Einatmen:** Frischluftzufuhr, bei Beschwerden Arzt aufsuchen.
- **Nach Hautkontakt:** Im allgemeinen ist das Produkt nicht hautreizend.
- **Nach Augenkontakt:**
Augen mehrere Minuten bei geöffnetem Lidspalt unter fließendem Wasser spülen. Bei anhaltenden Beschwerden Arzt konsultieren.
- **Nach Verschlucken:** Bei anhaltenden Beschwerden Arzt konsultieren.
- **4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**
Keine weiteren relevanten Informationen verfügbar.
- **4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**
Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

- **5.1 Löschmittel**
- **Geeignete Löschmittel:**
CO₂, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.
- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**
Keine weiteren relevanten Informationen verfügbar.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**
Nicht erforderlich.
- **6.2 Umweltschutzmaßnahmen:**
Mit viel Wasser verdünnen.
Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.
Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.
Für ausreichende Lüftung sorgen.
- **6.4 Verweis auf andere Abschnitte**
Informationen zur sicheren Handhabung siehe Abschnitt 7.
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.
Informationen zur Entsorgung siehe Abschnitt 13.

ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung**
Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.
Behälter mit Vorsicht öffnen und handhaben.
Aerosolbildung vermeiden.

(Fortsetzung auf Seite 4)

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(Fortsetzung von Seite 3)

- **Hinweise zum Brand- und Explosionsschutz:**
Vor Hitze schützen.
Maßnahmen gegen elektrostatische Aufladung treffen.
Atemschutzgeräte bereithalten.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** Keine besonderen Anforderungen.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:**
Behälter dicht geschlossen halten.
Vor Hitze und direkter Sonnenbestrahlung schützen.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** -
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.
- **8.1 Zu überwachende Parameter**

- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

68-12-2 N,N-Dimethylformamid

AGW	Langzeitwert: 15 mg/m ³ , 5 ml/m ³ 2(II);EU, DFG, AGS, H, Z
-----	--

- **Bestandteile mit biologischen Grenzwerten:**

68-12-2 N,N-Dimethylformamid

BGW	35 mg/l Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: N-Methylformamid plus N-Hydroxymethyl-N-methylformamid
-----	---

- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.
- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:**
Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.
Beschmutzte, getränkte Kleidung sofort ausziehen.
Vor den Pausen und bei Arbeitsende Hände waschen.
Getrennte Aufbewahrung der Schutzkleidung.
Berührung mit den Augen vermeiden.
Berührung mit den Augen und der Haut vermeiden.
- **Atemschutz:**
Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition unluftunabhängiges Atemschutzgerät verwenden.
- **Handschutz:**
Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein.
Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.
Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

(Fortsetzung auf Seite 5)

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- **Handschuhmaterial**
Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.
- **Durchdringungszeit des Handschuhmaterials**
Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.
- **Augenschutz:**



Dichtschließende Schutzbrille

ABSCHNITT 9: Physikalische und chemische Eigenschaften

· 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften

· Allgemeine Angaben

· Aussehen:

Form: Flüssigkeit

Farbe: Farblos

· **Geruch:** Aminartig

· **Geruchsschwelle:** Nicht bestimmt.

· **pH-Wert bei 20 °C:** 7

· Zustandsänderung

Schmelzpunkt/Schmelzbereich: -61 °C

Siedepunkt/Siedebereich: 152,5-153,5 °C

· **Flammpunkt:** 58 °C

· **Entzündlichkeit (fest, gasförmig):** Nicht anwendbar.

· **Zündtemperatur:** 440 °C

· **Zersetzungstemperatur:** Nicht bestimmt.

· **Selbstentzündlichkeit:** Nicht bestimmt.

· **Explosionsgefahr:** Nicht bestimmt.

· Explosionsgrenzen:

Untere: 2,2 Vol %

Obere: 16 Vol %

· **Dampfdruck bei 20 °C:** 3,5 hPa

· **Dichte bei 20 °C:** 0,9505 g/cm³

· **Relative Dichte** Nicht bestimmt.

· **Dampfdichte** Nicht bestimmt.

· **Verdampfungsgeschwindigkeit** Nicht bestimmt.

· Löslichkeit in / Mischbarkeit mit

Wasser: Vollständig mischbar.

· **Verteilungskoeffizient (n-Octanol/Wasser):** Nicht bestimmt.

· Viskosität:

Dynamisch bei 20 °C: 0,802 mPas

Kinematisch: Nicht bestimmt.

(Fortsetzung auf Seite 6)

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- | | |
|-------------------------------|--|
| · Lösemittelgehalt: | |
| Organische Lösemittel: | 0,0 % |
| Wasser: | 1,0 % |
| VOC (EU) | 0,00 % |
| · 9.2 Sonstige Angaben | Keine weiteren relevanten Informationen verfügbar. |

ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität**
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**

- **Einstufungsrelevante LD/LC50-Werte:**

68-12-2 N,N-Dimethylformamid

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

- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Keine Reizwirkung.
- **Schwere Augenschädigung/-reizung** Reizwirkung.
- **Sensibilisierung der Atemwege/Haut** Keine sensibilisierende Wirkung bekannt.
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
Repr. 1B

ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**
Wassergefährdungsklasse 1 (Listeneinstufung): schwach wassergefährdend
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.

(Fortsetzung auf Seite 7)

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· **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.
- **Empfohlenes Reinigungsmittel:** Wasser, gegebenenfalls mit Zusatz von Reinigungsmitteln.

ABSCHNITT 14: Angaben zum Transport

- | | |
|--|---|
| <ul style="list-style-type: none"> · 14.1 UN-Nummer · ADR, IMDG, IATA | UN2265 |
| <ul style="list-style-type: none"> · 14.2 Ordnungsgemäße UN-Versandbezeichnung · ADR · IMDG, IATA | 2265 N,N-DIMETHYLFORMAMID
N,N-DIMETHYLFORMAMIDE |
| <ul style="list-style-type: none"> · 14.3 Transportgefahrenklassen · ADR, IMDG, IATA <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> · Klasse · Gefahrzettel | 3 Entzündbare flüssige Stoffe
3 |
| <ul style="list-style-type: none"> · 14.4 Verpackungsgruppe · ADR, IMDG, IATA | III |
| <ul style="list-style-type: none"> · 14.5 Umweltgefahren: · Marine pollutant: | Nein |
| <ul style="list-style-type: none"> · 14.6 Besondere Vorsichtsmaßnahmen für den Verwender · Kemler-Zahl: · EMS-Nummer: | Achtung: Entzündbare flüssige Stoffe
30
F-E,S-D |
| <ul style="list-style-type: none"> · 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code | Nicht anwendbar. |
| <ul style="list-style-type: none"> · Transport/weitere Angaben: <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> · ADR · Begrenzte Menge (LQ) · Freigestellte Mengen (EQ)
 · Beförderungskategorie · Tunnelbeschränkungscode | |

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- | | |
|--|--|
| <ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) | <p>5L
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml</p> |
| <ul style="list-style-type: none"> · UN "Model Regulation": | <p>UN2265, N,N-DIMETHYLFORMAMID, 3, III</p> |

ABSCHNITT 15: Rechtsvorschriften

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
 - **Richtlinie 2012/18/EU**
 - **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.
 - **Nationale Vorschriften:**
 - **Wassergefährdungsklasse: WGK 1** (Listeneinstufung): schwach wassergefährdend.
 - **Sonstige Vorschriften, Beschränkungen und Verbotsverordnungen**
- | | |
|---------|----------------------|
| 68-12-2 | N,N-Dimethylformamid |
|---------|----------------------|
- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

- **Abkürzungen und Akronyme:**
 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
 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)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 Flam. Liq. 3: Flammable liquids, Hazard Category 3
 Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
 Repr. 1B: Reproductive toxicity, Hazard Category 1B

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 15.08.2015

Revisione: 15.08.2015

SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** N,N-Dimethylformamide, 99%

· **Articolo numero:** 26913-03

· **Numero CAS:**

68-12-2

· **Numeri CE:**

200-679-5

· **Numero indice:**

616-001-00-X

· **1.2 Usi pertinenti identificati della sostanza o miscela e usi sconsigliati** Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS02 fiamma

Flam. Liq. 3 H226 Liquido e vapori infiammabili.



GHS08 pericolo per la salute

Repr. 1B H360D Può nuocere al feto.



GHS07

Eye Irrit. 2 H319 Provoca grave irritazione oculare.

(continua a pagina 2)

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(Segue da pagina 1)

- **2.2 Elementi dell'etichetta**
- **Etichettatura secondo il regolamento (CE) n. 1272/2008**
La sostanza è classificata ed etichettata conformemente al regolamento CLP.
- **Pittogrammi di pericolo**



GHS02 GHS07 GHS08

- **Avvertenza Pericolo**
- **Componenti pericolosi che ne determinano l'etichettatura:**
N,N-dimetilformammide
- **Indicazioni di pericolo**
H226 Liquido e vapori infiammabili.
H319 Provoca grave irritazione oculare.
H360D Può nuocere al feto.
- **Consigli di prudenza**
P210 Tenere lontano da fonti di calore, superfici riscaldate, scintille, fiamme e altre fonti di innesco. Vietato fumare.
P241 Utilizzare impianti elettrici/di ventilazione/d'illuminazione/a prova di esplosione.
P303+P361+P353 IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliere immediatamente tutti gli indumenti contaminati. Sciacquare la pelle/fare una doccia.
P305+P351+P338 IN CASO DI CONTATTO CON GLI OCCHI: sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.
P405 Conservare sotto chiave.
P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.
- **2.3 Altri pericoli**
- **Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.

SEZIONE 3: Composizione/informazioni sugli ingredienti

- **3.1 Caratteristiche chimiche: Sostanze**
- **Numero CAS**
68-12-2 N,N-dimetilformammide
- **Numeri di identificazione**
- **Numeri CE:** 200-679-5
- **Numero indice:** 616-001-00-X

- **SVHC**

68-12-2	N,N-dimetilformammide
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SEZIONE 4: Misure di primo soccorso

- **4.1 Descrizione delle misure di primo soccorso**
- **Inalazione:** Portare in zona ben areata, in caso di disturbi consultare il medico.
- **Contatto con la pelle:** Generalmente il prodotto non è irritante per la pelle.

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- **Contatto con gli occhi:**
Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte. Se persiste il dolore consultare il medico.
- **Ingestione:** Se il dolore persiste consultare il medico.
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **4.3 Indicazione della eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**
Non sono disponibili altre informazioni.

SEZIONE 5: Misure antincendio

- **5.1 Mezzi di estinzione**
- **Mezzi di estinzione idonei:**
CO₂, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.
- **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.
- **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**
- **Mezzi protettivi specifici:** Non sono richiesti provvedimenti particolari.

SEZIONE 6: Misure in caso di rilascio accidentale

- **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza** Non necessario.
- **6.2 Precauzioni ambientali:**
Diluire abbondantemente con acqua.
Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.
- **6.3 Metodi e materiali per il contenimento e per la bonifica:**
Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).
Smaltimento del materiale contaminato conformemente al punto 13.
Provvedere ad una sufficiente areazione.
- **6.4 Riferimento ad altre sezioni**
Per informazioni relative ad una manipolazione sicura, vedere capitolo 7.
Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.
Per informazioni relative allo smaltimento vedere Capitolo 13.

SEZIONE 7: Manipolazione e immagazzinamento

- **7.1 Precauzioni per la manipolazione sicura**
Accurata ventilazione/aspirazione nei luoghi di lavoro.
Aprire e manipolare i recipienti con cautela.
Evitare la formazione di aerosol.
- **Indicazioni in caso di incendio ed esplosione:**
Proteggere dal calore.
Adottare provvedimenti contro cariche elettrostatiche.
Tener pronto il respiratore.
- **7.2 Condizioni per l'immagazzinamento sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**
Mantenere i recipienti ermeticamente chiusi.
Proteggere dal calore e dai raggi diretti del sole.

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· **7.3 Usi finali specifici** Non sono disponibili altre informazioni.

SEZIONE 8: Controllo dell'esposizione/protezione individuale

· **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.

· **8.1 Parametri di controllo**

· **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:**

68-12-2 N,N-dimetilformammide

TWA	Valore a lungo termine: 30 mg/m ³ , 10 ppm Cute, A4, IBE
VL	Valore a breve termine: 30 mg/m ³ , 10 ppm Valore a lungo termine: 15 mg/m ³ , 5 ppm pelle

· **Componenti con valori limite biologici:**

68-12-2 N,N-dimetilformammide

IBE	15 mg/l Campioni: urine Momento del prelievo: a fine turno Indicatore biologico: N-metilformammide
	40 mg/l Campioni: urine Momento del prelievo: a prima ultimo turno settimana lavorativa Indicatore biologico: N-Acetil-S-(N-metil carbamoyl) cisteina

· **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.

· **8.2 Controlli dell'esposizione**

· **Mezzi protettivi individuali:**

· **Norme generali protettive e di igiene del lavoro:**

- Tenere lontano da cibo, bevande e foraggi.
- Togliere immediatamente gli abiti contaminati.
- Lavarsi le mani prima dell'intervallo o a lavoro terminato.
- Custodire separatamente l'equipaggiamento protettivo.
- Evitare il contatto con gli occhi.
- Evitare il contatto con gli occhi e la pelle.

· **Maschera protettiva:**

Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.

· **Guanti protettivi:**

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione. A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche. Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

· **Materiale dei guanti**

La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.

· **Tempo di permeazione del materiale dei guanti**

Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.

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· **Occhiali protettivi:**

Occhiali protettivi a tenuta

SEZIONE 9: Proprietà fisiche e chimiche

· 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

· Indicazioni generali

· Aspetto:

Forma: Liquido

Colore: Incolore

· **Odore:** Amminico

· **Soglia olfattiva:** Non definito.

· **valori di pH a 20 °C:** 7

· Cambiamento di stato

Temperatura di fusione/ambito di fusione: -61 °C

Temperatura di ebollizione/ambito di ebollizione: 152,5-153,5 °C

· **Punto di infiammabilità:** 58 °C

· **Infiammabilità (solido, gassoso):** Non applicabile.

· **Temperatura di accensione:** 440 °C

· **Temperatura di decomposizione:** Non definito.

· **Autoaccensione:** Non definito.

· **Pericolo di esplosione:** Non definito.

· Limiti di infiammabilità:

Inferiore: 2,2 Vol %

Superiore: 16 Vol %

· **Tensione di vapore a 20 °C:** 3,5 hPa

· **Densità a 20 °C:** 0,9505 g/cm³

· **Densità relativa** Non definito.

· **Densità del vapore** Non definito.

· **Velocità di evaporazione** Non definito.

· Solubilità in/Miscibilità con acqua:

Completamente miscibile.

· **Coefficiente di distribuzione (n-Octanol/acqua):** Non definito.

· Viscosità:

Dinamica a 20 °C: 0,802 mPas

Cinematica: Non definito.

· Tenore del solvente:

Solventi organici: 0,0 %

Acqua: 1,0 %

VOC (CE) 0,00 %

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· 9.2 Altre informazioni

Non sono disponibili altre informazioni.

SEZIONE 10: Stabilità e reattività

- 10.1 Reattività
- 10.2 Stabilità chimica
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- 10.3 Possibilità di reazioni pericolose Non sono note reazioni pericolose.
- 10.4 Condizioni da evitare Non sono disponibili altre informazioni.
- 10.5 Materiali incompatibili: Non sono disponibili altre informazioni.
- 10.6 Prodotti di decomposizione pericolosi: Non sono noti prodotti di decomposizione pericolosi.

SEZIONE 11: Informazioni tossicologiche

- 11.1 Informazioni sugli effetti tossicologici
- Tossicità acuta

· Valori LD/LC50 rilevanti per la classificazione:

68-12-2 N,N-dimetilformammide

Orale	LD50	2800 mg/kg (rat)
Cutaneo	LD50	4720 mg/kg (rabbit)
Per inalazione	LC50/4 h	9400 mg/l (mouse)

- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea** Non ha effetti irritanti.
- **Lesioni oculari gravi/irritazioni oculari gravi** Irritante.
- **Sensibilizzazione respiratoria o cutanea** Non si conoscono effetti sensibilizzanti.
- **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**
Repr. 1B

SEZIONE 12: Informazioni ecologiche

- 12.1 Tossicità
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- 12.2 Persistenza e degradabilità Non sono disponibili altre informazioni.
- 12.3 Potenziale di bioaccumulo Non sono disponibili altre informazioni.
- 12.4 Mobilità nel suolo Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**
Pericolosità per le acque classe 1 (D) (Classif. secondo le liste): poco pericoloso
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.
- 12.5 Risultati della valutazione PBT e vPvB
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- 12.6 Altri effetti avversi Non sono disponibili altre informazioni.

SEZIONE 13: Considerazioni sullo smaltimento

- 13.1 Metodi di trattamento dei rifiuti
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.

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- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.
- **Detergente consigliato:** Acqua eventualmente con l'aggiunta di detersivi.

SEZIONE 14: Informazioni sul trasporto

- **14.1 Numero ONU**
- **ADR, IMDG, IATA**

UN2265

- **14.2 Nome di spedizione dell'ONU**
- **ADR**
- **IMDG, IATA**

2265 N,N-DIMETILFORMAMMIDE
N,N-DIMETHYLFORMAMIDE

- **14.3 Classi di pericolo connesso al trasporto**
- **ADR, IMDG, IATA**



- **Classe**
- **Etichetta**

3 Liquidi infiammabili
3

- **14.4 Gruppo di imballaggio**
- **ADR, IMDG, IATA**

III

- **14.5 Pericoli per l'ambiente:**
- **Marine pollutant:**

No

- **14.6 Precauzioni speciali per gli utilizzatori**
- **Numero Kemler:**
- **Numero EMS:**

Attenzione: Liquidi infiammabili
30
F-E,S-D

- **14.7 Trasporto di rifiuti secondo l'allegato II di MARPOL 73/78 ed il codice IBC**

Non applicabile.

- **Trasporto/ulteriori indicazioni:**

- **ADR**
- **Quantità limitate (LQ)**
- **Quantità esenti (EQ)**

5L
Codice: E1
Quantità massima netta per imballaggio interno: 30 ml
Quantità massima netta per imballaggio esterno: 1000 ml

- **Categoria di trasporto**
- **Codice di restrizione in galleria**

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":**

UN2265, N,N-DIMETILFORMAMMIDE, 3, III

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SEZIONE 15: Informazioni sulla regolamentazione

· **15.1 Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**

· **Direttiva 2012/18/UE**

· **Sostanze pericolose specificate - ALLEGATO I** La sostanza non è contenuta

· **Disposizioni nazionali:**

· **Ulteriori disposizioni, limitazioni e decreti proibitivi**

· **Sostanze estremamente preoccupanti (SVHC) ai sensi della regolamento REACH, articolo 57**

68-12-2 | N,N-dimetilformammide

· **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

SEZIONE 16: Altre informazioni

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

· **Abbreviazioni e acronimi:**

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

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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Repr. 1B: Reproductive toxicity, Hazard Category 1B

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1 화학제품과 회사에 관한 정보

- **제품 식별자**
- **제품명:** N,N-Dimethylformamide, 99%
- **상품번호:** 26913-03
- **CAS-번호**
68-12-2
- **EC 의번호:**
200-679-5
- **색인 번호:**
616-001-00-X
- **해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도** 추가적인 정보가 존재하지 않습니다.
- **제품의 권고 용도와 사용상의 제한:** 실험실 화학품
- **안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보**
- **제조자/수입자/유통업자 정보:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Samchang Commercial Co., Ltd.**
Yeo Eui Do
PO Box 1110
Seoul, Korea
Tel: 82 2 703 3040
Fax: 82 2 717 3298
- **추가적인 정보 획득 가능:** Product safety department
- **비상연락 전화번호:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 유해성.위험성

- **순물질 또는 혼합물의 분류**



화염

인화성 액체 구분3 H226 인화성 액체 및 증기



건강에 위험

생식 독성 구분1B H360 태아 또는 생식능력에 손상을 일으킬 수 있음



심한 눈 손상/자극성 구분2 H319 눈에 심한 자극을 일으킴

- **라벨표기 요소**

- **GHS 라벨 요소**

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

(2 쪽에 계속)

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· **그림문자**



GHS02 GHS07 GHS08

· **신호어 위험**

· **상표상에명확히위험성이표시된성분:**

N,N-dimethylformamide

· **유해.위험 문구**

인화성 액체 및 증기
 눈에 심한 자극을 일으킴
 태아 또는 생식능력에 손상을 일으킬 수 있음

· **예방조치 문구**

열·스파크·화염·고열로부터 멀리하시오 – 금연
 폭발 방지용 전기·환기·조명·장비를 사용하시오.
 피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시오 피부를 물/샤워로 행구시오.
 눈에 물으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하시오. 계속 씻으시오.
 잠금장치가 있는 저장장소에 저장하시오.
 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· **기타 유해성**

· PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
 · PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
 · vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

3 구성성분의 명칭 및 함유량

· **화 학 적 특 성:** 화학물질

· **CAS-번호표시**

68-12-2 N,N-dimethylformamide

· **식별 번호**

· **EC 의번호:** 200-679-5

· **색인 번호:** 616-001-00-X

4 응급조치 요령

· **응급조치요령 내용**

· **흡입했을 때:** 신선한 공기를 쉼, 통증이 있을 때는 의료진의 도움을 구한다.
 · **피부에 접촉했을 때:** 일반적으로 이제품은 피부에 자극적이지 않다.
 · **눈에 들어갔을 때:** 흐르는 물에 눈을 몇분동안 씻어내고나서, 증상이 지속될 경우에는 의사와 상담한다
 · **먹었을 때:** 증상이 지속될 경우에는 의사와 상담한다.
 · **기타 의사의 주의사항:**
 · **가장 중요한 급·만성 증상 및 영향** 추가적인 정보가 존재하지 않습니다.
 · **즉각적인 의료처치 및 특별치료가 필요함을 시사하는 징후** 추가적인 정보가 존재하지 않습니다.

KR

(3 쪽에계속)

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5 폭발.화재시 대처방법

- **소화제**
- **적절한 소화제:**
이산화탄소, 진화용 석회 가루 또는 물 방사를 사용하고, 더 큰 화재는 물을 분사하거나 알코올이 함유된 거품으로 끈다.
- **본 화학물질이나 혼합물에서 발생하는 특별 유해성** 추가적인 정보가 존재하지 않습니다.
- **소방관에 대한 권고사항**
- **화재 진압 시 착용할 보호구 및 예방조치:** 특별한 조치가 필요없음.

6 누출 사고 시 대처방법

- **개인적 예방조치, 보호장비 및 응급처치 절차** 필요없음.
- **환경 관련 예방조치:**
많은 물로 희석 시킨다.
하수도망/해수면위의물/지하수로도달하지않게한다.
- **밀폐 및 정화 방법과 소재:**
액체가 혼합된 물질 (모래, 규조토, 산성 결합물, 일반 결합물, 톱밥)에 흡입되도록 한다.
항목 13에 따라 오염된 물질을 쓰레기로 처분한다.
충분한 환기가 되도록 한다.
- **타 섹션 참조**
안전관리에 대한 정보는 제7 장을 참고하십시오.
개인 보호 장비에 대한 정보는 제8 장을 참고하십시오.
쓰레기 처리에 대한 정보는 제13 장을 참고하십시오.

7 취급 및 저장방법

- **취급:**
- **안전 취급을 위한 예방조치**
작업장에서는 통풍이 잘 되고/습기 제거가 잘 되게 주의한다.
조심스럽게 용기를 개봉하거나 취급한다.
연무질이 형성되는 것을 피한다.
- **화재 및 폭발 사고 예방대책에 관한 정보:**
열로부터 보호한다.
정전기의 충전으로부터 보호한다.
호흡보호장비를 항상 비치한다.
- **혼합위험성 등 안전 저장 조건**
- **보관:**
- **안전한 저장 방법:** 특별한 요구사항이 없음.
- **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필요없음
- **보관 조건에 관한 추가적인 정보:**
용기를 새지 않게 밀폐한 채 보관한다.
열이나 직사광선으로부터 보호한다.
- **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

8 누출방지 및 개인보호구

- **첨단시설 디자인에 대한 추가정보:** 더 이상 의 자료는 없음. 항목 7 을 참고하십시오.

(4 쪽에계속)

-KR-

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통제 변수

· 화학물질의 노출기준, 생물학적 노출기준 등:

68-12-2 N,N-dimethylformamide

TLV (ROK)	장기간의값: 30 mg/m ³ , 10 ppm Skin
IOELV (EU)	단기간의값: 30 mg/m ³ , 10 ppm 장기간의값: 15 mg/m ³ , 5 ppm Haut
PEL (USA)	장기간의값: 30 mg/m ³ , 10 ppm Skin
REL (USA)	장기간의값: 30 mg/m ³ , 10 ppm Skin
TLV (USA)	장기간의값: 30 mg/m ³ , 10 ppm Skin; BEI

· **추가 정보:** 제조할 당시에 유효한 목록을 기초로 사용했다.

· 노출 통제

· 개인 보호구

· 일반적보호조치및위생조치:

- 식료품, 음료수와 사료로부터 멀리 떨어져 두어 놓는다.
- 더러워지거나 음료수가 묻은 옷은 즉시 탈의한다.
- 휴식 전이나 작업이 끝날때마다 손을 씻는다.
- 방호복은 따로 보관한다.
- 눈과의 접촉을 피한다.
- 눈과 피부와의 접촉을 피한다.

· 호흡기 보호:

단 시간 또는 경미한 오염의 경우에는 호흡여과기를 사용한다. 심각한 또는 장기간 노출시에는 호흡보호장비를 사용한다.

· 손 보호:

장갑재질은 제품 / 원료 / 조제를 통과시키지 않아야 하고, 내구성이 있어야 한다.
테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합물에 적합한 장갑재질에 대한 추천이 없다.
투과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

· 장갑의 재료

적합한 장갑의 선정은 재질 차이뿐만 아니라 품질 기준의 차이도 고려하여 이루어져야 하고 제조업자에 따라서도 다르게 선정되어야 한다.

· **장갑 재료의 투과 시간** 정확한 관통 시간은 보호장갑 제조자에 의하여 인지되고, 준수되어야 한다.

· 눈 보호:



팍조이는보안경

9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보

· 일반정보

· 외형

· 물리적 상태:	액체
· 색:	색소가 없는
· 냄새:	아민종류의

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· 후각역치	알맞지않다.
· pH 의경우 20 °C:	7
· 상태변화 녹는점/어는점:	-61 °C
초기 끓는점과 끓는점 범위:	152.5-153.5 °C
· 인화점:	58 °C
· 인화성(고체, 기체):	해당사항 없음.
· 점화온도:	440 °C
· 분해 온도:	알맞지않다.
· 자기점화:	알맞지않다.
· 폭발위험:	알맞지않다.
· 인화 또는 폭발 범위의 상한/하한 아래로:	2.2 Vol %
위로:	16 Vol %
· 증기압 의경우 20 °C:	3.5 hPa
· 밀도 의경우 20 °C:	0.9505 g/cm ³
· 비중:	알맞지않다.
· 증기밀도:	알맞지않다.
· 증발 속도:	알맞지않다.
· 용해도: 물:	완전히혼합할수있는
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도: 역학성 의경우 20 °C:	0.802 mPas
동점성:	알맞지않다.
· 용매내용물 유기용매:	0.0 %
물:	1.0 %
VOC (EU)	0.00 %
· 기타 정보	추가적인 정보가 존재하지 않습니다.

10 안정성 및 반응성

- 반응성
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라사용할경우해체는없다
- 유해반응 가능성 위험한 반응으로는알려지지않았다.
- 피해야 할 조건 추가적인 정보가 존재하지 않습니다.
- 혼합 금지 물질: 추가적인 정보가 존재하지 않습니다.
- 유해분해물질: 위험성있는분해물들은알려지지않았다.

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11 독성에 관한 정보

- 독성학적 영향에 대한 정보
- 급성 독성:

- LD/LC50-수치에 따른 분류:

68-12-2 N,N-dimethylformamide

구강의	LD50	2800 mg/kg (rat)
피부의	LD50	4720 mg/kg (rabbit)
흡입의	LC50/4 h	9400 mg/l (mouse)

- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 무자극
- 심한 눈 손상 또는 자극성: 자극
- 감각화: 민감한영향이없는것으로알려져있다.
- 다음 종류의 잠재적인 효과에 대한 정보
- CMR-효과 (암 유발, 돌연변이성 그리고 생식 독성)
생식 독성 구분1B

12 환경에 미치는 영향

- 독성
- 수생독성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성 추가적인 정보가 존재하지 않습니다.
- 환경 시스템에서의 행동:
- 생물농축 잠재성 추가적인 정보가 존재하지 않습니다.
- 토양내 이동성 추가적인 정보가 존재하지 않습니다.
- 추가적인 생태학 정보:
- 일반 특징:
수질오염등급 1 (목록분류): 약하게수질오염이된
회석시키지않은채대량으로지하수나, 하천으로그리고하수도망에도달하지않게한다.
- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.
- 기타 부작용 추가적인 정보가 존재하지 않습니다.

13 폐기시 주의사항

- 폐기물 처리 방법
- 권고: 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- 비위생적 포장:
- 권고: 당국의지침에입각한쓰레기처리.
- 추천 세정제: 경우에따라서세제가첨가된물

14 운송에 필요한 정보

- 유엔 번호
 - ADR, IMDG, IATA
- UN2265

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<ul style="list-style-type: none"> · UN 적정 선적명 · ADR · IMDG, IATA 	<p>2265 N,N-DIMETHYLFORMAMIDE N,N-DIMETHYLFORMAMIDE</p>
<ul style="list-style-type: none"> · 교통 위험 클래스 · ADR, IMDG, IATA 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · 등급 · 위험물 라벨 	<p>3 발화성용액 3</p>
<ul style="list-style-type: none"> · 용기등급 · ADR, IMDG, IATA 	<p>III</p>
<ul style="list-style-type: none"> · 환경적 유해물질: · 해양오염물질: 	<p>아니오</p>
<ul style="list-style-type: none"> · 이용자 특별 예방조치 · 위험 코드: · EMS-번호: 	<p>경고: 발화성용액 30 F-E,S-D</p>
<ul style="list-style-type: none"> · MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송 	<p>해당사항 없음.</p>
<ul style="list-style-type: none"> · 운 송/추가 정보: 	
<ul style="list-style-type: none"> · ADR · 한정 수량 (LQ) · Excepted quantities (EQ) 	<p>5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> · 운송 구분 · 터널 제한 코드 	<p>3 D/E</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p>5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> · UN "모범 규제": 	<p>UN2265, N,N-DIMETHYLFORMAMIDE, 3, III</p>

15 법적 규제현황

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory		
68-12-2	N,N-dimethylformamide	KE-11411
7732-18-5	water, distilled, conductivity or of similar purity	KE-35400

· GHS 라벨 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

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· 위험 도표



GHS02 GHS07 GHS08

· 표지어 위험

· 상표상에명확히위험성이표시된성분:

N,N-dimethylformamide

· 위험 문구

인화성 액체 및 증기
 눈에 심한 자극을 일으킴
 태아 또는 생식능력에 손상을 일으킬 수 있음

· 주의 문구

열·스파크·화염·고열로부터 멀리하십시오 – 금연
 폭발 방지용 전기·환기·조명·장비를 사용하십시오.
 피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으십시오. 피부를 물/샤워로 행구시오.
 눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으시오.
 잠금장치가 있는 저장장소에 저장하십시오.

현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· 화학물질 안전성 평가: 화학물질 안전성 평가가 수행되지 않음

16 그 밖의 참고사항

이보고는 우리지식에 대한 오늘날의상태에 대하여평가하고있다, 하지만이보고서는생산특성에 관한보증은 기술하지않았으며계약적인법률관계에기반을두고있지도않다

- **최초 작성일자:** 2015.08.15
- **개정 횟수 및 최종 개정일자:** 1 / 2015.08.15
- **약어와 두문자어:**

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
 IATA: International Air Transport Association
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 인화성 액체 구분3: Flammable liquids, Hazard Category 3
 심한 눈 손상/자극성 구분2: Serious eye damage/eye irritation, Hazard Category 2
 생식 독성 구분1B: Reproductive toxicity, Hazard Category 1B

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 15.08.2015

Revisión: 15.08.2015

SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

· 1.1 Identificador del producto

· **Nombre comercial:** *N,N-Dimethylformamide, 99%*

· **Número del artículo:** 26913-03

· **Número CAS:**

68-12-2

· **Número CE:**

200-679-5

· **Número de clasificación:**

616-001-00-X

· **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**

No existen más datos relevantes disponibles.

· **Utilización del producto / de la elaboración** *Sustancias químicas de laboratorio*

· **1.3 Datos del proveedor de la ficha de datos de seguridad**

· **Fabricante/distribuidor:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Aname

C/ Perez Galdos no. 2

28693 Quijorna

Madrid, Spain

Tel: +34.91.816.89.50

Fax: +34.91.816.85.94

email: ventas@aname.es

· **Área de información:** *Product safety department*

· **1.4 Teléfono de emergencia:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SECCIÓN 2: Identificación de los peligros

· **2.1 Clasificación de la sustancia o de la mezcla**

· **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS02 llama

Flam. Liq. 3 H226 Líquidos y vapores inflamables.



GHS08 peligro para la salud

Repr. 1B H360D Puede dañar al feto.



GHS07

Eye Irrit. 2 H319 Provoca irritación ocular grave.

(se continua en página 2)

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 15.08.2015

Revisión: 15.08.2015

Nombre comercial: *N,N-Dimethylformamide, 99%*

(se continua en página 1)

- **2.2 Elementos de la etiqueta**
- **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**
La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.
- **Pictogramas de peligro**



GHS02 GHS07 GHS08

- **Palabra de advertencia Peligro**
- **Componentes peligrosos a indicar en el etiquetaje:**
N,N-dimetilformamida
- **Indicaciones de peligro**
H226 Líquidos y vapores inflamables.
H319 Provoca irritación ocular grave.
H360D Puede dañar al feto.
- **Consejos de prudencia**
P210 Mantener alejado del calor, de superficies calientes, de chispas, de llamas abiertas y de cualquier otra fuente de ignición. No fumar.
P241 Utilizar un material eléctrico, de ventilación o de iluminación/antideflagrante.
P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/ducharse.
P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando.
P405 Guardar bajo llave.
P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.
- **2.3 Otros peligros**
- **Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.

SECCIÓN 3: Composición/información sobre los componentes

- **3.1 Caracterización química: Sustancias**
- **Denominación N° CAS**
68-12-2 *N,N-dimetilformamida*
- **Número(s) de identificación**
- **Número CE:** 200-679-5
- **Número de clasificación:** 616-001-00-X

· SVHC

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SECCIÓN 4: Primeros auxilios

- **4.1 Descripción de los primeros auxilios**
- **En caso de inhalación del producto:** Suministrar aire fresco. En caso de trastornos, consultar al médico.
- **En caso de contacto con la piel:** Por regla general, el producto no irrita la piel.

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- **En caso de con los ojos:**
Limpiar los ojos abiertos durante varios minutos con agua corriente. En caso de trastornos persistentes consultar un médico.
- **En caso de ingestión:** Consultar un médico si los trastornos persisten.
- **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.
- **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**
No existen más datos relevantes disponibles.

SECCIÓN 5: Medidas de lucha contra incendios

- **5.1 Medios de extinción**
- **Sustancias extintoras apropiadas:**
CO₂, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.
- **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.
- **5.3 Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** No se requieren medidas especiales.

SECCIÓN 6: Medidas en caso de vertido accidental

- **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia** No es necesario.
- **6.2 Precauciones relativas al medio ambiente:**
Diluir con mucha agua.
Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.
- **6.3 Métodos y material de contención y de limpieza:**
Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).
Desechar el material contaminado como vertido según item 13.
Asegurar suficiente ventilación.
- **6.4 Referencia a otras secciones**
Ver capítulo 7 para mayor información sobre una manipulación segura.
Ver capítulo 8 para mayor información sobre el equipo personal de protección.
Para mayor información sobre cómo desechar el producto, ver capítulo 13.

SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura**
Asegurar suficiente ventilación /aspiración en el puesto de trabajo.
Abrir y manejar el recipiente con cuidado.
Evitar la formación de aerosoles.
- **Prevención de incendios y explosiones:**
Proteger del calor.
Tomar medidas contra las cargas electrostáticas.
Tener preparados los aparatos respiratorios.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** No se requieren medidas especiales.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**
Mantener el recipiente cerrado herméticamente.
Proteger del calor y de la luz directa del sol.

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· **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

SECCIÓN 8: Controles de exposición/protección individual

· **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**

Sin datos adicionales, ver punto 7.

· **8.1 Parámetros de control**· **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:****68-12-2 N,N-dimetilformamida**

LEP	Valor de corta duración: 30 mg/m ³ , 10 ppm Valor de larga duración: 15 mg/m ³ , 5 ppm VLI, vía dérmica, TRIB, VLB
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· **Componentes con valores límite biológicos:****68-12-2 N,N-dimetilformamida**

VLB	15 mg/l Muestra: orina Momento de Muestero: Final de la jornada laboral Indicador Biológico: N-Metilformamida
	40 mg/l Muestra: orina Momento de Muestero: Principio de la última jornada de la semana laboral Indicador Biológico: N-Acetil-S-(N-metilcarbamoil)cisteína

· **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.· **8.2 Controles de la exposición**· **Equipo de protección individual:**· **Medidas generales de protección e higiene:**

Mantener alejado de alimentos, bebidas y alimentos para animales.

Quitarse de inmediato la ropa ensuciada o impregnada.

Lavarse las manos antes de las pausas y al final del trabajo.

Guardar la ropa protectora por separado.

Evitar el contacto con los ojos.

Evitar el contacto con los ojos y la piel.

· **Protección respiratoria:**

Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.

· **Protección de manos:**

El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.

Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

· **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.

· **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

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· **Protección de ojos:**

Gafas de protección herméticas

SECCIÓN 9: Propiedades físicas y químicas

· **9.1 Información sobre propiedades físicas y químicas básicas**· **Datos generales**· **Aspecto:**

· Forma:	Líquido
· Color:	Incoloro
· Olor:	Similar al de las aminas
· Umbral olfativo:	No determinado.

· **valor pH a 20 °C:** 7· **Cambio de estado**

· Punto de fusión /campo de fusión:	-61 °C
· Punto de ebullición /campo de ebullición:	152,5-153,5 °C

· **Punto de inflamación:** 58 °C· **Inflamabilidad (sólido, gaseiforme):** No aplicable.· **Temperatura de ignición:** 440 °C· **Temperatura de descomposición:** No determinado.· **Autoinflamabilidad:** No determinado.· **Peligro de explosión:** No determinado.· **Límites de explosión:**

· Inferior:	2,2 Vol %
· Superior:	16 Vol %

· **Presión de vapor a 20 °C:** 3,5 hPa· **Densidad a 20 °C:** 0,9505 g/cm³· **Densidad relativa:** No determinado.· **Densidad de vapor:** No determinado.· **Velocidad de evaporación:** No determinado.· **Solubilidad en / miscibilidad con agua:**

Completamente mezclable.

· **Coefficiente de reparto (n-octanol/agua):** No determinado.· **Viscosidad:**

· Dinámica a 20 °C:	0,802 mPas
· Cinemática:	No determinado.

· **Concentración del disolvente:**

· Disolventes orgánicos:	0,0 %
· Agua:	1,0 %
· VOC (CE)	0,00 %

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· 9.2 Información adicional

No existen más datos relevantes disponibles.

SECCIÓN 10: Estabilidad y reactividad

- 10.1 Reactividad
- 10.2 Estabilidad química
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- 10.3 Posibilidad de reacciones peligrosas No se conocen reacciones peligrosas.
- 10.4 Condiciones que deben evitarse No existen más datos relevantes disponibles.
- 10.5 Materiales incompatibles: No existen más datos relevantes disponibles.
- 10.6 Productos de descomposición peligrosos: No se conocen productos de descomposición peligrosos.

SECCIÓN 11: Información toxicológica

- 11.1 Información sobre los efectos toxicológicos
- Toxicidad aguda

· Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:

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

- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** No produce irritaciones.
- **Lesiones o irritación ocular graves** Produce irritaciones.
- **Sensibilización respiratoria o cutánea** No se conoce ningún efecto sensibilizante.
- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**
Repr. 1B

SECCIÓN 12: Información ecológica

- 12.1 Toxicidad
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- 12.2 Persistencia y degradabilidad No existen más datos relevantes disponibles.
- 12.3 Potencial de bioacumulación No existen más datos relevantes disponibles.
- 12.4 Movilidad en el suelo No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
Nivel de riesgo para el agua 1 (clasificación de listas): escasamente peligroso para el agua
En estado no diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
- 12.5 Resultados de la valoración PBT y mPmB
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- 12.6 Otros efectos adversos No existen más datos relevantes disponibles.

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SECCIÓN 13: Consideraciones relativas a la eliminación

- 13.1 Métodos para el tratamiento de residuos
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.
- **Producto de limpieza recomendado:** Agua, eventualmente añadiendo productos de limpieza.

SECCIÓN 14: Información relativa al transporte

· 14.1 Número UN	UN2265
· ADR, IMDG, IATA	
· 14.2 Designación oficial de transporte de las Naciones Unidas	
· ADR	2265 N,N-DIMETILFORMAMIDA
· IMDG, IATA	N,N-DIMETHYLFORMAMIDE
· 14.3 Clase(s) de peligro para el transporte	
· ADR, IMDG, IATA	
	
· Clase	3 Líquidos inflamables
· Etiqueta	3
· 14.4 Grupo de embalaje	
· ADR, IMDG, IATA	III
· 14.5 Peligros para el medio ambiente:	
· Contaminante marino:	No
· 14.6 Precauciones particulares para los usuarios	Atención: Líquidos inflamables
· Número Kemler:	30
· Número EMS:	F-E,S-D
· 14.7 Transporte a granel con arreglo al anexo II del Convenio Marpol 73/78 y del Código IBC	No aplicable.
· Transporte/datos adicionales:	

· ADR	
· Cantidades limitadas (LQ)	5L
· Cantidades exceptuadas (EQ)	Código: E1 Cantidad neta máxima por envase interior: 30 ml Cantidad neta máxima por embalaje exterior: 1000 ml
· Categoría de transporte	3
· Código de restricción del túnel	D/E

· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

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· "Reglamentación Modelo" de la UNECE: UN2265, *N,N-DIMETILFORMAMIDA, 3, III*

SECCIÓN 15: Información reglamentaria

· **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**

· Directiva 2012/18/UE

· Sustancias peligrosas nominadas - ANEXO I No contiene la sustancia.

· Disposiciones nacionales:

· Demás disposiciones, limitaciones y decretos prohibitivos

· Sustancias altamente preocupantes (SVHC) según REACH, artículo 57

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· **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

· **Abreviaturas y acrónimos:**

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

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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Repr. 1B: Reproductive toxicity, Hazard Category 1B