Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 Version number 37 (replaces version 36) Revision: 25.03.2026

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

· **1.1 Product identifier**
· **Trade name: dimethyl formamide**
· **SDS number:** CH0019
· **CAS Number:**
68-12-2

· **EC number:**
200-679-5
· **Index number:**
616-001-00-X
· **Registration number** 01-2119475605-32
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
For professional users only
No further relevant information available.
· **Life cycle stages**
IS Use at industrial Sites
F Formulation or re-packing
· **Sector of Use**
SU9 Manufacture of fine chemicals
SU24 Scientific research and development
· **Product category**
PC0 Other
PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
PC21 Laboratory chemicals
PC29 Pharmaceuticals
PC40 Extraction agents
· **Process category**
PROC5 Mixing or blending in batch processes
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4 Chemical production where opportunity for exposure arises
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC15 Use as laboratory reagent
· **Environmental release category**
ERC2 Formulation into mixture
ERC6a Use of an intermediary
ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC1 Manufacture of the substance
· **Application of the substance / the mixture** Chemicals products for laboratory

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
CARLO ERBA REAGENTS
Chaussée du Vexin
Parc d'Affaires des Portes - BP616
27106 VAL DE REUIL Cedex
Téléphone: +33 (0)2 32 09 20 00
Télécopie: +33 (0)2 32 09 20 20
· **Further information obtainable from:**
Q.A / Normative

(Contd. on page 2)

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 1)

email: MSDS_CER-SDS@cer.dgroup.it

· ***1.4 Emergency telephone number:***

Ireland - Tel : 00 353 1 8092568 - 00 353 1 8379964 (24h/24)

EU Tel : 112

SECTION 2: Hazards identification

· ***2.1 Classification of the substance or mixture***

· ***Classification according to Regulation (EC) No 1272/2008***



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS08 health hazard

Repr. 1B H360D May damage the unborn child.



GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2 H319 Causes serious eye irritation.

· ***2.2 Label elements***

· ***Labelling according to Regulation (EC) No 1272/2008***

The substance is classified and labelled according to the CLP regulation.

· ***Hazard pictograms***



GHS02 GHS07 GHS08

· ***Signal word*** *Danger*

· ***Hazard statements***

H226 Flammable liquid and vapour.

H312+H332 Harmful in contact with skin or if inhaled.

H319 Causes serious eye irritation.

H360D May damage the unborn child.

· ***Precautionary statements***

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof [electrical/ventilating/lighting] equipment.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

(Contd. on page 3)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 Version number 37 (replaces version 36) Revision: 25.03.2026

Trade name: dimethyl formamide

(Contd. of page 2)

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· **Additional information:**
Restricted to professional users.
· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable
· **Determination of endocrine-disrupting properties** Not applicable

SECTION 3: Composition/information on ingredients

· **3.1 Substances**

· **CAS No. Description**
CAS: 68-12-2 dimethyl formamide

· **Identification number(s)**

· **EC number:** 200-679-5

· **Index number:** 616-001-00-X

· **SVHC**	
CAS: 68-12-2	dimethyl formamide

SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly. Wash contaminated clothing before reuse.
If skin irritation continues, consult a doctor.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
Seek immediate medical advice.
· **Information for doctor:** Show the doctor this Material Safety Data Sheet.
· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **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.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet.
· **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:

(Contd. on page 4)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 3)

Nitrogen oxides (NOx)
Carbon monoxide and carbon dioxide
In the absence of oxygen: Ammonia (NH3).
· ***5.3 Advice for firefighters***
· ***Protective equipment:***
In closed rooms wear a self contained breathing apparatus.
Do not inhale gases in case or fire or combustion.
· ***Additional information*** *Keep receptacles cool with water spray.*

SECTION 6: Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures***
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.
Ensure adequate ventilation
· ***6.2 Environmental precautions:***
Do not allow to penetrate the ground/soil.
Dilute with plenty of water after collecting the liquid.
Do not allow to enter sewers/ surface or ground water.
· ***6.3 Methods and material for containment and cleaning up:***
Collect the liquid with vacuum in a suitable container and absorb the remainder with a porous material (diatomite, acid binders, universal binders, etc).
Ensure adequate ventilation.
Dispose contaminated material as waste according to section 13.
· ***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***
Store in cool, dry place in tightly closed receptacles.
Ensure good ventilation/exhaustion at the workplace.
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
Pneumatic conveyance only with nitrogen or other inert gases.
· ***Information about fire - and explosion protection:***



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.
Do not spray onto a naked flame or any incandescent material.
Keep respiratory protective device available.

· ***7.2 Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
Suitable material for receptacles and pipes: steel or stainless steel.
Suitable material for receptacles and pipes: Aluminium.
Suitable material for receptacles : glass bottles.
Store in a cool location.
Use only receptacles specifically permitted for this substance/product.

(Contd. on page 5)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 4)

· ***Information about storage in one common storage facility:*** *Store away from oxidizing agents.*
· ***Further information about storage conditions:***
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· ***Maximum storage temperature:*** *<50°C*
· ***7.3 Specific end use(s)*** *No further relevant information available.*

SECTION 8: Exposure controls/personal protection

· ***8.1 Control parameters***

· **Ingredients with limit values that require monitoring at the workplace:**	
CAS: 68-12-2 dimethyl formamide	
BOELV	Short-term value: 30 mg/m³, 10 ppm Long-term value: 15 mg/m³, 5 ppm Skin
IOELV	Short-term value: 30 mg/m³, 10 ppm Long-term value: 15 mg/m³, 5 ppm Skin

· **DNELs**		
Dermal	DNEL (workers-systemic chronic effects)	1.1 mg/kg
Inhalative	DNEL (workers-systemic chronic effects)	6 mg/m3

· **PNECs**	
PNEC (Fresh water)	30 mg/l
PNEC (Freshwater sediment)	25.05 mg/kg
PNEC (Marine water)	3 mg/l
PNEC (STP)	123 mg/l
PNEC (Soil)	16.24 mg/kg

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

· ***8.2 Exposure controls***
· ***Appropriate engineering controls***
Safety shower and eye bath. Mechanical exhaust required.
No further data; see section 7.
· ***Individual protection measures, such as personal protective equipment***
· ***General protective and hygienic measures:***
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Pregnant women should strictly avoid inhalation or skin contact.
Clean skin thoroughly immediately after handling the product.
· ***Respiratory protection:***
Use suitable respiratory protective device only when aerosol or mist is formed.



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.

Filter P2
Use suitable respiratory protective device in case of insufficient ventilation.
The selected respiratory protection must comply with standard EN 136/140/143/145/149.

(Contd. on page 6)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 5)

· ***Hand protection***
The selected protective gloves have to satisfy the specifications of REGULATION (EU) 2016/425 and the standard EN 374 derived from it.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation



Protective gloves

Rubber gloves
· ***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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· ***For the permanent contact gloves made of the following materials are suitable:***
Butyl rubber, BR
Recommended thickness of the material: ≥ 0.7 mm
· ***Eye/face protection***



Tightly sealed goggles

· ***Environmental exposure controls***
In case of unintended release of the product: See section 6 of the Safety Data Sheet.
· ***Risk management measures*** *Keep good industrial hygiene.*

SECTION 9: Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***	
· ***Molecular weight***	*73.1 g*
· ***Physical state***	*Liquid*
· ***Colour:***	*Colourless*
· ***Odour:***	*Amine-like*
· ***Odour threshold:***	*Not determined*
· ***Melting point/freezing point:***	*-61 °C*
· ***Boiling point or initial boiling point and boiling range***	*153 °C*
· ***Flammability***	*Not applicable*
· ***Lower and upper explosion limit***	
· ***Lower:***	*2.2 Vol %*
· ***Upper:***	*16 Vol %*
· ***Flash point:***	*58 °C*
· ***Auto-ignition temperature:***	*440 °C*
· ***Decomposition temperature:***	*Not determined*
· ***pH***	*7*
· ***Viscosity:***	
· ***Kinematic viscosity***	*Not determined*
· ***Dynamic at 20 °C:***	*0.86 mPas*
· ***Solubility***	
· ***water:***	*Fully miscible.*

(Contd. on page 7)

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 6)

· ***organic solvents:***	*Soluble in many organic solvents.*
· ***Partition coefficient n-octanol/water (log value)***	*-0.85078*
· ***Vapour pressure at 20 °C:***	*3.5 hPa*
· ***Vapour pressure at 50 °C:***	*22.9 hPa*
· ***Density and/or relative density***	
· ***Density at 20 °C:***	*0.95 g/cm³*
· ***Relative density***	*Not determined*
· ***Vapour density***	*Not determined*

· ***9.2 Other information***	
· ***Appearance:***	
· ***Form:***	*Fluid*
· ***Important information on protection of health and environment, and on safety.***	
· ***Ignition temperature:***	*Not determined*
· ***Explosive properties:***	*Not determined*
· ***Molecular formula***	*C3 H7 N O*
· ***Molecular weight***	*73.1 g/mol*
· ***Refractive index***	*1.4305*
· ***Change in condition***	
· ***Evaporation rate***	*Not determined*

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

SECTION 10: Stability and reactivity

· ***10.1 Reactivity*** *See 10.3*
· ***10.2 Chemical stability***
· ***Thermal decomposition / conditions to be avoided:*** *No decomposition if used according to specifications.*
· ***10.3 Possibility of hazardous reactions*** *Reacts with strong oxidising agents.*
· ***10.4 Conditions to avoid***
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
· ***10.5 Incompatible materials:***
Nitrates
Strong Oxidant.

(Contd. on page 8)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

(Contd. of page 7)

· **10.6 Hazardous decomposition products:**
Formaldehyde
Carbon monoxide, Carbon dioxide.
Nitrogen oxides (NOx)

SECTION 11: Toxicological information

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

· **LD/LC50 values relevant for classification:**		
Oral	LD50	2,800 mg/kg (rat)
Dermal	LD50	5,000 mg/kg (rabbit)
Inhalative	LC50/4 h	9,400 mg/L (mouse)

· **Primary irritant effect:**
· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation**
Strong irritant with the danger of severe eye injury.
Causes serious eye irritation.
· **Ingestion:** It can be harmfull if swallowed.
· **Inhalation:** Harmful if inhaled.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** May damage the unborn child.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.
· **Other information (about experimental toxicology):** No further relevant information available.
· **11.2 Information on other hazards**
· **Endocrine disrupting properties** Substance is not listed.

*
SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
NOEC	1,500 mg/L (Daphnia) (21d)
EC50/48h	13,100 mg/l (Daphnia)
EC50	>1,000 mg/L (algae) (72h)
LC50/96h	7,100 mg/l (fishes)

· **12.2 Persistence and degradability** Easily biodegradable
· **Method**
· **Ecological information** Not available
· **Other information:** The product is easily biodegradable.
· **12.3 Bioaccumulative potential** Non significant accumulation in organisms
· **12.4 Mobility in soil** No further relevant information available.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable
· **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.

(Contd. on page 9)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 8)

· ***12.7 Other adverse effects***
· ***Remark:*** *Local effects: may change the environmental pH endangering the aquatic life.*
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.

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.
Reutilise if possible or contact a waste processors for recycling or safe disposal.
· ***Waste disposal key:***
The European Union does not establish uniform rules for the disposal of chemical waste, which are special waste. Their treatment and elimination of the domestic legislation of each country. So, in each case, you should contact the relevant authorities, or those companies legally authorized for elimination of waste.
2014/955/UE: Council Decision of 18 December 2014 amending the list of wastes contained in Decision 2000/532/EC.
Directive 2008/98/EC of the european parliament and of the council of 18 November 2008, in ist latest valid version.

· ***European waste catalogue***	
07 00 00	*WASTES FROM ORGANIC CHEMICAL PROCESSES*
07 01 00	*wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals*
*07 01 04**	*other organic solvents, washing liquids and mother liquors*
HP3	*Flammable*
HP4	*Irritant - skin irritation and eye damage*
HP6	*Acute Toxicity*
HP10	*Toxic for reproduction*

· ***Uncleaned packaging:***
The containers and packaging materials contaminated with dangerous substances or preparations, have the same treatment of products.
Directive 94/62/EC of the European Parliament and the Council of 20 December 1994 on packaging and packaging waste.
· ***Recommendation:***
Disposal must be made according to official regulations.
Wash with solvents to be incinerated.
Packagings that may not be cleansed are to be disposed of in the same manner as the product.
· ***Recommended cleansing agents:*** *Water, if necessary together with cleansing agents.*

SECTION 14: Transport information

· ***14.1 UN number or ID number***	
· ***ADR/RID, IMDG, IATA***	*UN2265*
· ***14.2 UN proper shipping name***	
· ***ADR/RID***	*2265 N,N-DIMETHYLFORMAMIDE*
· ***IMDG***	*N,N-DIMETHYLFORMAMIDE*
· ***IATA***	*N,N-Dimethylformamide*

(Contd. on page 10)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 9)

· ***14.3 Transport hazard class(es)***

· ***ADR/RID***



· ***Class***	*3 (F1) Flammable liquids.*
· ***Label***	*3*

· ***IMDG, IATA***



· ***Class***	*3 Flammable liquids.*
· ***Label***	*3*
· ***14.4 Packing group***	
· ***ADR/RID, IMDG, IATA***	*III*
· ***14.5 Environmental hazards:***	
· ***Marine pollutant:***	*No*
· ***14.6 Special precautions for user***	*Warning: Flammable liquids.*
· ***Hazard identification number (Kemler code):***	*30*
· ***EMS Number:***	*F-E,S-D*
· ***Stowage Category***	*A*
· ***14.7 Maritime transport in bulk according to IMO instruments***	*Not applicable*
· ***Transport/Additional information:***	
· ***ADR/RID***	
· ***Excepted quantities (EQ):***	*E1*
· ***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":***	*UN 2265 N,N-DIMETHYLFORMAMIDE, 3, III*

SECTION 15: Regulatory information

· ***15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture***
· ***SARA Section 355 (extremely hazardous substances)*** *Substance is not listed.*
· ***SARA Section 313 (specific toxic chemical listings)*** *Substance is listed.*

(Contd. on page 11)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 Version number 37 (replaces version 36) Revision: 25.03.2026

Trade name: dimethyl formamide

(Contd. of page 10)

· **Prop 65 - Chemicals known to cause cancer** Substance is listed.

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** Substance is not listed.
· **Seveso category** P5c FLAMMABLE LIQUIDS
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
· **REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)** Substance is not listed.
· **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)** Substance is not listed.
· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 30, 40, 72, 75, 76
· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
· **REGULATION (EU) 2024/590 on substances that deplete the ozone layer** Substance is not listed.
· **National regulations:**
· **Waterhazard class:** Water hazard class 2 (Assessment by list): hazardous for water.

· **Other regulations, limitations and prohibitive regulations**
· **Substances of very high concern (SVHC) according to REACH, Article 57** Substance is listed.
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

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

· **Training hints** Deploy only trained chemical workers.
· **Department issuing SDS:** Q.A./Normative
· **Date of previous version:** 11.09.2025
· **Version number of previous version:** 36
· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
RCR : Risk Characterisation Ratio
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Repr. 1B: Reproductive toxicity – Category 1B
· **Sources**
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006, REACH, in the latest valid version.
Regulation (EC) N° 1272/2008 of the European Parliament and of the Council of 16 December 2008, CLP, in the latest valid version.

(Contd. on page 12)

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 11)

Globally Harmonized System, GHS
ADR/RID, IMDG, IATA
PubChem : an open chemistry database at the National Institutes of Health (NIH)
ECHA : European CHemicals Agency
GESTIS : Information system on hazardous substances of the German Social Accident Insurance
· **** Data compared to the previous version altered.*** .

(Contd. on page 13)

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 12)

Annex: Exposure scenario 1

· ***Short title of the exposure scenario*** *Substance manufacturing*
· ***Sector of Use*** *Industrial use.*
· ***Process category***
PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
· ***Environmental release category***
ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC6a Use of an intermediary
· ***Description of the activities / processes covered in the Exposure Scenario***
See section 1 of the annex to the Safety Data Sheet.
· ***Conditions of use***
According to directions for use.
Customary application according to section 1.
· ***Duration and frequency*** *8hrs (full working shift).*
· ***Worker*** *8hrs (full working shift).*
· ***Physical parameters***
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the preparation.
· ***Physical state*** *Fluid*
· ***Concentration of the substance in the mixture*** *Raw material.*
· ***Used amount per time or activity*** *According to directions for use.*
· ***Other operational conditions*** *Observe the general safety regulations when handling chemicals.*
· ***Other operational conditions affecting environmental exposure***
Observe section 6 of the Safety Data Sheet (Accidental release measures).
· ***Other operational conditions affecting worker exposure***
Avoid contact with eyes.
Avoid contact with the skin.
Do not breathe gas/vapour/aerosol.
Take precautionary measures against static discharge.
Keep away from sources of ignition - No smoking.
· ***Risk management measures***
· ***Worker protection***
· ***Organisational protective measures***
Keep good industrial hygiene.
Deploy only trained chemical workers.
Ensure that activities are executed by specialists or authorised personnel only.
No special measures required.
Provide sufficient washing facilities.
Ensure good ventilation. This can be achieved by using a local exhaustion or general exhaust system. If these measures are insufficient to keep the solvent vapour concentration below the workplace limit, wear an adequate respiratory protective device.
Work clothes must not consist of textiles that exhibit dangerous melting behaviour in case of fire.
· ***Technical protective measures***
Ensure that suitable extractors are available on processing machines
Ensure good ventilation/exhaustion at the workplace.
Provide explosion-proof electrical equipment.
· ***Personal protective measures***
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Pregnant women should strictly avoid inhalation or skin contact.

(Contd. on page 14)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

(Contd. of page 13)

Tightly sealed goggles
Use suitable respiratory protective device only when aerosol or mist is formed.
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.
Filter P2
Use suitable respiratory protective device in case of insufficient ventilation.
The selected respiratory protection must comply with standard EN 136/140/143/145/149.
The selected protective gloves have to satisfy the specifications of REGULATION (EU) 2016/425 and the standard EN 374 derived from it.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Protective gloves
Rubber gloves
Tightly sealed goggles
The usual precautionary measures are to be adhered to when handling chemicals.
Detailed measures on hand protection according to Safety Data Sheet, section 8.

· ***Environmental protection measures***
· ***Notes*** *In case of unintended release of the product: See section 6 of the Safety Data Sheet.*
· ***Disposal measures***
Disposal must be made according to official regulations.
Ensure that waste is collected and contained.
· ***Disposal procedures***
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
· ***Waste type*** *Partially emptied and uncleaned packaging*
· ***Exposure estimation***
· ***Worker (dermal)***
The highest dermal exposure to be expected is 0.0172 mg / kg / day.
The exposure estimation was carried out in accordance with ECETOC TRA.
· ***Worker (inhalation)***
The highest inhalative exposure to be expected is 0.0118 ppm.
The exposure estimation was carried out in accordance with ECETOC TRA.
· ***Guidance for downstream users***
Whether the downstream user acts within the scope of the Exposure Scenario can be verified based on the information in sections 1 to 8.

(Contd. on page 15)

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.03.2026 *Version number 37 (replaces version 36)* *Revision: 25.03.2026*

Trade name: dimethyl formamide

(Contd. of page 14)

Annex: Exposure scenario 2

· ***Short title of the exposure scenario*** *Chemicals products for laboratory*
· ***Sector of Use*** *Industrial use.*
· ***Process category*** *PROC15 Use as laboratory reagent*
· ***Environmental release category***
ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC6a Use of an intermediary
· ***Description of the activities / processes covered in the Exposure Scenario***
See section 1 of the annex to the Safety Data Sheet.
· ***Conditions of use*** *Customary application according to section 1.*
· ***Duration and frequency*** *5 workdays/week.*
· ***Physical parameters***
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the preparation.
· ***Physical state*** *Fluid*
· ***Concentration of the substance in the mixture*** *Raw material.*
· ***Other operational conditions*** *Observe the general safety regulations when handling chemicals.*
· ***Other operational conditions affecting environmental exposure*** *No special measures required.*
· ***Other operational conditions affecting worker exposure***
Avoid contact with eyes.
Avoid contact with the skin.
Do not breathe gas/vapour/aerosol.
Take precautionary measures against static discharge.
Keep away from sources of ignition - No smoking.
· ***Risk management measures***
· ***Worker protection***
· ***Organisational protective measures***
Keep good industrial hygiene.
Deploy only trained chemical workers.
Ensure that activities are executed by specialists or authorised personnel only.
Provide sufficient washing facilities.
Ensure good ventilation. This can be achieved by using a local exhaustion or general exhaust system. If these measures are insufficient to keep the solvent vapour concentration below the workplace limit, wear an adequate respiratory protective device.
Work clothes must not consist of textiles that exhibit dangerous melting behaviour in case of fire.
· ***Technical protective measures***
Ensure good ventilation/exhaustion at the workplace.
Provide explosion-proof electrical equipment.
Minimum efficiency of local ventilation [%]: 90.
· ***Personal protective measures***
Avoid contact with the skin.
Avoid contact with the eyes.
Pregnant women should strictly avoid inhalation or skin contact.
Use suitable respiratory protective device only when aerosol or mist is formed.
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.
Filter P2
Use suitable respiratory protective device in case of insufficient ventilation.
The selected respiratory protection must comply with standard EN 136/140/143/145/149.
The selected protective gloves have to satisfy the specifications of REGULATION (EU) 2016/425 and the standard EN 374 derived from it.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Protective gloves

(Contd. on page 16)

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

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Trade name: dimethyl formamide

(Contd. of page 15)

Rubber gloves
Avoid direct contact with the chemical/ the product/ the preparation by organisational measures.
Face protection
The usual precautionary measures are to be adhered to when handling chemicals.
Detailed measures on hand protection according to Safety Data Sheet, section 8.
Protective work clothing

· ***Environmental protection measures***
· ***Notes*** *In case of unintended release of the product: See section 6 of the Safety Data Sheet.*
· ***Disposal measures*** *Ensure that waste is collected and contained.*
· ***Disposal procedures***
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
· ***Waste type*** *Partially emptied and uncleaned packaging*
· ***Exposure estimation***
· ***Worker (dermal)***
The highest dermal exposure to be expected is 0.0171 mg / kg / day.
The exposure estimation was carried out in accordance with ECETOC TRA.
· ***Worker (inhalation)***
The highest inhalative exposure to be expected is 0.5931 ppm.
The exposure estimation was carried out in accordance with ECETOC TRA.
· ***Guidance for downstream users***
Whether the downstream user acts within the scope of the Exposure Scenario can be verified based on the information in sections 1 to 8.
Whether the downstream user uses the substance / the mixture within the scope of the Exposure Scenario can be determined by means of a technical assessment.