N,N-Dimethylformamide

51781-1L

Version 1.10 Revision Date 06.11.2025

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

1.1. Product identifier

Product name	:	N,N-Dimethylformamide
SDS-number	:	000000020243
Type of product	:	Substance
Remarks	:	SDS according to Art. 31 of Regulation (EC) 1907/2006. In accordance to the Article 14 (1) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation is not required.
Chemical name	:	N, N-dimethylformamide; dimethyl formamide
Index-No.	:	616-001-00-X

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture	:	Laboratory chemicals
Uses advised against	:	none

1.3. Details of the supplier of the safety data sheet

Company	:	Honeywell Specialty Chemicals Seelze GmbH Wunstorfer Straße 40 30926 Seelze Germany	Solstice Advanced Materials US, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
Telephone	:	(49) 5137-999 0	
For further information, please contact:	:	SafetyDataSheet@solstice.com	

1.4. Emergency telephone number

Emergency telephone number	:	+1-703-527-3887 (ChemTrec-Transport) +1 303-739-1378 (Medical)

: Poison Control Center:
United Kingdom: (+44) 844 892 0111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Flammable liquids Category 3
H226 Flammable liquid and vapour.
Acute toxicity Category 4 - Dermal
H312 Harmful in contact with skin.
Eye irritation Category 2
H319 Causes serious eye irritation.
Acute toxicity Category 4 - Inhalation
H332 Harmful if inhaled.
Reproductive toxicity Category 1B
H360D May damage the unborn child.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms :



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 :	P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P284	Wear respiratory protection.
	P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

P308 + P313	Continue rinsing. IF exposed or concerned: Get medical advice/ attention.

Special labelling of certain products: : Restricted to professional users.

2.3. Other hazards

Vapours may form explosive mixtures with air. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical name	CAS-No. Index-No. EC-No.	Classification 1272/2008	Concentration	Remarks
N, N-dimethylformamide; dimethyl formamide	68-12-2 616-001-00-X 200-679-5	Flam. Liq. 3; H226 Acute Tox. 4; H332; Inhalation Acute Tox. 4; H312; Dermal Eye Irrit. 2; H319 Repr. 1B; H360D	100 %	

3.2. Mixtures

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:
First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

Inhalation:
If breathed in, move person into fresh air. Call a physician immediately.

Skin contact:
After contact with skin, wash immediately with plenty of soap and water. Call a physician immediately.

Eye contact:
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Protect unharmed eye. Remove contact lenses. Call a physician immediately.

Ingestion:
When swallowed, allow water to be drunk. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

See Section 11 for more detailed information on health effects and symptoms. :

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Water spray
Foam
Carbon dioxide (CO2)
Dry powder

Extinguishing media which shall not be used for safety reasons:
High volume water jet

5.2. Special hazards arising from the substance or mixture

Some risk may be expected of corrosive and toxic decomposition products.
In case of fire hazardous decomposition products may be produced such as:
Nitrogen oxides (NOx)
Carbon dioxide (CO2)
Carbon monoxide
Formaldehyde

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
No unprotected exposed skin areas.
Exposure to decomposition products may be a hazard to health.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.Cool containers/tanks with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Wear personal protective equipment. Unprotected persons must be kept away. Remove all sources of ignition. Wear full protective clothing and self-contained breathing apparatus.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Clean contaminated floors and objects thoroughly while observing environmental regulations. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

Soak up with inert absorbent material.
Pick for disposal in tightly closed containers
Wash thoroughly after handling.

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:
Exhaust ventilation at the object is necessary.

Advice on protection against fire and explosion:
Keep away from sources of ignition - No smoking. The heavy vapours can overcome a considerable distance up to the source of ignition. Vapours may form explosive mixtures with air. Take precautionary measures against static discharges.

Hygiene measures:
Take off all contaminated clothing immediately. Keep working clothes separately. Separate rooms are required for washing, showering and changing clothes. Recommended preventive skin protection

Temperature class:
T2

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:
Store in original container. Keep under nitrogen. Keep container tightly closed in a dry and well-ventilated place. Store in a place accessible by authorized persons only.

Further information on storage conditions:
Do not store at temperature exceeding 50 °C.

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
N, N-dimethylformamide; dimethyl formamide	EH40 WEL			Listed
N, N-dimethylformamide; dimethyl formamide	EU ELV SKIN_DES			Can be absorbed through the skin.
N, N-dimethylformamide; dimethyl formamide	EU ELV STEL	30 mg/m3 10 ppm		Indicative
N, N-dimethylformamide; dimethyl formamide	EU ELV TWA	15 mg/m3 5 ppm		Indicative
N, N-dimethylformamide; dimethyl formamide	EH40 WEL SKIN_DES			Can be absorbed through the skin.
N, N-dimethylformamide; dimethyl formamide	EH40 WEL TWA	15 mg/m3 5 ppm		
N, N-dimethylformamide; dimethyl formamide	EH40 WEL STEL	30 mg/m3 10 ppm	15 minutes	
N, N-dimethylformamide; dimethyl formamide	EU OELIII TWA	15 mg/m3 5 ppm		
N, N-dimethylformamide; dimethyl formamide	EU OELIII STEL	10 ppm		
N, N-dimethylformamide; dimethyl formamide	EU OELIII STEL	30 mg/m3		
N, N-dimethylformamide; dimethyl formamide	EU OELIII SKIN_DES			Can be absorbed through the skin.

EH40 WEL - UK. EH40 Workplace Exposure Limits (WELs), as amended

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EU ELV - EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended

SKIN_DES - Skin designation:

EU ELV - EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended

STEL - Short term exposure limit

EU ELV - EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended
TWA - Time weighted average

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
N, N-dimethylformamide; dimethyl formamide	Workers / Long-term systemic effects		6 mg/m3	Inhalation	
N, N-dimethylformamide; dimethyl formamide	Workers / Long-term systemic effects		1,1mg/kg bw/d	Skin contact	
N, N-dimethylformamide; dimethyl formamide	Consumers / Long-term systemic effects		1,1 mg/m3	Inhalation	
N, N-dimethylformamide; dimethyl formamide	Consumers / Long-term systemic effects		0,16mg/kg bw/d	Ingestion	

Component	Environmental compartment / Value	Remarks
N, N-dimethylformamide; dimethyl formamide	Fresh water sediment: 111 mg/kg	Assessment factor: 100
N, N-dimethylformamide; dimethyl formamide	Marine sediment: 11,1 mg/kg	Assessment factor: 1000
N, N-dimethylformamide; dimethyl formamide	Sewage treatment plant: 44 mg/l	Assessment factor: 10

8.2. Exposure controls

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.
Ensure that eyewash stations and safety showers are close to the workstation location.
Do not breathe vapours or spray mist.
Avoid contact with skin and eyes.
Avoid exposure - obtain special instructions before use.

Personal protective equipment
Respiratory protection:
In the case of vapour formation use a respirator with an approved filter.
Recommended Filter type:
Organic vapour type

Hand protection:
Glove material: butyl-rubber
Break through time: > 480 min
Glove thickness: 0,7 mm
Butoject® 898
Gloves must be inspected prior to use.
Replace when worn.
Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.
Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.
Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer reccomends to use the chemical protective glove in practice not longer than 50% of the recomended permeation time.
Manufacturer´s directions for use should be observed because of great diversity of types .
Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:
Safety goggles

Skin and body protection:
Impervious clothing

Complete suit protecting against chemicals
Wear suitable protective equipment.

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

(a) Physical state	:	liquid
(b) Colour	:	colourless
(c) Odour	:	weak
(d) Melting point/freezing point	:	-61 °C
(e) Boiling point/boiling range	:	152 - 153 °C at 1.013 hPa
(f) Flammability	:	Flammable liquid and vapour.
(g) Lower and upper explosion limit	:	Lower explosion limit 2,2 %(V)
	:	Upper explosion limit 16 %(V)
(h) Flash point	:	57,5 °C at 1.013,25 hPa closed cup Method: DIN 51755
(i) Auto-ignition temperature	:	410 °C
(j) Decomposition temperature	:	No decomposition if used as directed.
(k) pH	:	7,0 at 20 °C

(l) Viscosity, kinematic	:	No data available
(m) Solubility(ies)	:	Water solubility: completely miscible Solubility in other solvents: Soluble in most organic solvents
(n) Partition coefficient: n-octanol/water	:	log Pow -0,85 at: 25 °C
(o) Vapour pressure	:	3,77 hPa at 20 °C 23 hPa at 50 °C
(p) Density and / or relative density	:	0,94 g/cm3 at 20 °C
(q) Relative vapour density	:	No data available
(r) Particle characteristics	:	No data available

9.2 Other Information

Polymer characteristics	:	No data available
The product is hygroscopic. Evaporation rate	:	No data available
Viscosity, dynamic	:	0,86 mPa.s at 20 °C

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

No decomposition if used as directed.

10.3. Possibility of hazardous reactions

Reactions with halogenated compounds.

10.4. Conditions to avoid

Heat, flames and sparks.

10.5. Incompatible materials

Strong oxidizing agents
Reducing agents
Halogenated compounds
Alkali metals
Nitrates

10.6. Hazardous decomposition products

Nitrogen oxides (NOx)
Carbon dioxide (CO2)
Carbon monoxide
Formaldehyde

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

(a) Acute toxicity

Acute oral toxicity:
LD50
Species: Rat
Value: 3.010 mg/kg

Method: OECD Test Guideline 401

Acute dermal toxicity:
Classification based on Annex VI of regulation 1272/2008/EC.

Acute inhalation toxicity:
Classification based on Annex VI of regulation 1272/2008/EC.

Acute toxicity (other routes of administration):
No data available

(b) Skin corrosion/irritation:
Species: Rabbit
Result: No skin irritation

(c) Serious eye damage/eye irritation:
Species: Rabbit
Result: irritating

Species: Rabbit
Result: Irritating to eyes.

(d) Respiratory or skin sensitisation:
Species: Mouse
Result: Does not cause skin sensitisation.
Method: OECD Test Guideline 406

(h) STOT-single exposure:
No data available

(i) STOT - repeated exposure:
No data available

(j) Aspiration hazard:
No data available

11.2. Information on other hazards

Endocrine disrupting properties
No data available

Other information:
Irritating to mucous membranes

Dimethylformamide is easily absorbed through the skin and can increase the toxicity of other chemicals.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:
LC50
Species: Lepomis macrochirus (Bluegill sunfish)
Value: 7.100 mg/l
Exposure time: 96 h

Toxicity to aquatic plants:
LC50
Species: Desmodesmus subspicatus (green algae)
Value: > 1.000 mg/l
Exposure time: 96 h
Method: DIN 38412

Toxicity to Microorganisms:
EC50
Species: Vibrio fischerii (Bacteria)
Value: 12.300 - 17.500 mg/l
Exposure time: 5 min

Toxicity to aquatic invertebrates:
EC50
Species: Daphnia magna (Water flea)
Value: 13.100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

12.2. Persistence and degradability

Biodegradability:
DOC decrease
Biodegradation: 100 %
Exposure time: 21 d
Result: Readily biodegradable.
Method: OECD 301 E

12.3. Bioaccumulative potential

Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 0,3 - 1,2
Exposure time: 28 d
Method: OECD Test Guideline 305C
Bioaccumulation is unlikely.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

Bioaccumulation is unlikely.
Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:
Dispose according to legal requirements.

Packaging:
Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:
Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006
For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID:2265 IMDG:2265 IATA:2265

14.2 UN proper shipping name
ADR/RID:N,N-DIMETHYLFORMAMIDE
IMDG:N,N-DIMETHYLFORMAMIDE
IATA:N,N-Dimethylformamide

14.3 Transport hazard class(es)
ADR/RID:3 IMDG: 3 IATA: 3

14.4 Packaging group
ADR/RID:III IMDG: III IATA: III

14.5 Environmental hazards
ADR/RID:no Marine pollutant: no

14.6 Special precautions for user
No data available

14.7 Maritime transport in bulk according to IMO instruments
No data available

SECTION 15: Regulatory information

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

Basis	Value	Remarks
Substances of very high concern (SVHC)		This product does contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of ≥ 0.1 % (w/w).
Directive 2012/18/EC SEVESO III Listed in Regulation : P5c: FLAMMABLE LIQUIDS Number in Regulation: 1.2.5.3	**Quantity**: 5.000.000 kg **Quantity**: 50.000.000 kg	
Regulation (EC) No. 1907/2006, Annex XVII		This product contains an ingredient according to Annex XVII of the REACH Regulation1907/2006/EC.

Other inventory information

USA. List of Active Substances on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory, as amended
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended
On the inventory, or in compliance with the inventory

Canada. Domestic Substances List (DSL), as amended
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

N, N-dimethylformamide; dimethyl formamide	:	H226	Flammable liquid and vapour.

H332	Harmful if inhaled.
H312	Harmful in contact with skin.
H319	Causes serious eye irritation.
H360D	May damage the unborn child.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:
EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very biaccumulative substance
PBT Persistent, bioaccmulative und toxic substance

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