

N,N-Dimethylformamide

51781-6X1L

Version 3.4

Revision Date 11.06.2022

Supersedes 2

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

1.1. Product identifier

Product name : N,N-Dimethylformamide
SDS-number : 000000011357
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

REACH Registration
Number : no data available

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

Use of the
Substance/Mixture : Solvent

Uses advised against : none

1.3. Details of the supplier of the safety data sheet

Company : Honeywell Advanced Limited Honeywell International, Inc.
Riverview House,Harvey's 115 Tabor Road
Quay Apartments Morris Plains, NJ 07950-2546
V94 R3DE Limerick USA
Ireland

Telephone : (353) 1 903 9302
For further information,
please contact: : SafetyDataSheet@Honeywell.com

1.4. Emergency telephone number

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Emergency telephone : +1-703-527-3887 (ChemTrec-Transport)
number : +1-303-389-1414 (Medical)
Country based Poison : see chapter 15.1
Control Center

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 - Inhalation
H332 Harmful if inhaled.
Acute toxicity Category 4 - Dermal
H312 Harmful in contact with skin.
Eye irritation Category 2
H319 Causes serious eye irritation.
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.

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P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Special labelling of certain products : Restricted to professional users.

2.3. Other hazards

None known. Results of PBT and vPvB assessment, see chapter 12.5.

SECTION 3: Composition/information on ingredients

3.1. Substance

Chemical name	CAS-No. Index-No. REACH Registration Number 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. Mixture

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:

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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. Get medical attention 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.

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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 (NO_x)
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

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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.

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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 STEL	30 mg/m3 10 ppm		
N, N-dimethylformamide; dimethyl formamide	EH40 WEL TWA	15 mg/m3 5 ppm		

SKIN_DES - Skin designation:
STEL - Short term exposure limit
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	

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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

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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 recommends to use the chemical protective glove in practice not longer than 50% of the recommended 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

Physical state	:	liquid
Colour	:	colourless
Odour	:	mild amine-like
molecular weight	:	73,10 g/mol
Freezing point	:	-60,4 °C
Boiling point/boiling range	:	153 °C

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Upper explosion limit	:	15,2 %(V)
Lower explosion limit	:	2,2 %(V)
Flash point	:	58 °C Method: closed cup
Auto-ignition temperature	:	445 °C
Decomposition temperature	:	No decomposition if used as directed.
pH	:	neutral
Viscosity, kinematic	:	No data available
Water solubility	:	completely soluble
Solubility in other solvents	:	Soluble in most organic solvents
Partition coefficient: n-octanol/water	:	log Pow -0,85 at: 25 °C
Vapour pressure	:	3,6 hPa
Density	:	0,949 g/cm ³ at 20 °C
Relative vapour density	:	2,5 (Air = 1.0)

9.2 Other Information

The product is hygroscopic.		
Viscosity, dynamic	:	0,86 mPa.s at 20 °C

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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 (NO_x)
Carbon dioxide (CO₂)
Carbon monoxide
Formaldehyde

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

LD50

Species: Rat

Value: 3.010 mg/kg

Method: OECD Test Guideline 401

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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.

Skin irritation:

Species: Rabbit

Result: No skin irritation

Eye irritation:

Species: Rabbit

Result: irritating

Respiratory or skin sensitisation:

Species: Mouse

Result: Does not cause skin sensitisation.

Method: OECD Test Guideline 406

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

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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: rapidly 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

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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

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

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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 Regulation 1907/2006/EC.

VOC:

Switzerland. VOC Ordinance, Annex II (Products), 0 %

Poison Control Center

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+)35929154233
Croatia	(+3851)23-48-342

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000

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Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222
Ireland	+353(1)8092166
Italy	0382 24444
Germany	Berlin : 030/19240
	Bonn : 0228/19240
	Erfurt : 0361/730730
	Freiburg : 0761/19240
	Göttingen : 0551/19240
	Homburg : 06841/19240
	Mainz : 06131/19240
Munich : 089/19240	
Latvia	+37167042473

Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	800250250
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420
Sweden	112 (begär Giftinformation);+46104566786
Switzerland	145
United Kingdom	(+44) 844 892 0111

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

Australia. Industrial Chemicals Act (AIC), as amended
On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List

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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

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DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very bioaccumulative substance
PBT Persistent, bioaccumulative und toxic substance

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.

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