

Safety Data Sheet

N,N-Dimethylformamide

Revision date : 2012/01/09

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Version: 1.0

(30034812/SDS_GEN_CA/EN)

1. Product and Company Identification

Company

BASF Canada Inc.
100 Milverton Drive
Mississauga, ON L5R 4H1, CANADA

24 Hour Emergency Response Information

CANUTEC (reverse charges): (613) 996-6666
BASF HOTLINE: (800) 454-COPE (2673)

Molecular formula:	C(3) H(7) ON
Chemical family:	amide
Synonyms:	N,N-Dimethylformamide

2. Hazards Identification

Emergency overview

COMBUSTIBLE.
IRRITANT.
TOXIC.
Contains a suspect teratogen.
Irritating to eyes.

State of matter: liquid
Colour: colourless
Odour: faint odour, amine-like

Potential health effects**Acute toxicity:**

Of low toxicity after single ingestion. Of moderate toxicity after short-term skin contact. Of moderate toxicity after short-term inhalation.

Irritation / corrosion:

Not irritating to the skin. Eye contact causes irritation.

Assessment other acute effects:

The available information is not sufficient for evaluation.

Sensitization:

Skin sensitizing effects were not observed in animal studies.

Chronic toxicity:

Repeated dose toxicity: The substance may cause damage to the liver after repeated inhalation. The substance may cause damage to the liver after repeated ingestion. Repeated exposure to large quantities may affect certain organs.

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May affect the liver as indicated in animal studies.

Reproductive toxicity: Animal studies gave no indication of a fertility impairing effect at doses which were not toxic to the parental animals.

Teratogenicity: The substance caused malformations/developmental toxicity in laboratory animals. Indications of possible developmental toxicity/teratogenicity were seen in animal studies.

Genotoxicity: In the majority of studies performed with microorganisms and in mammalian cell culture, a mutagenic effect was not found. A mutagenic effect was also not observed in in vivo tests.

Medical conditions aggravated by overexposure:

Individuals with pre-existing diseases of the liver, skin, kidney or blood may have increased susceptibility to excessive exposures.

Signs and symptoms of overexposure:

Overexposure may cause: vomiting, abdominal cramps, loss of appetite, nausea, headache, dizziness alcohol intolerance

Potential environmental effects

Terrestrial toxicity:

Study scientifically not justified.

3. Composition / Information on Ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Hazardous ingredients</u>
68-12-2	60.0 - 100.0 %	N,N-dimethylformamide

4. First-Aid Measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air. Assist in breathing if necessary. Consult a physician.

If on skin:

Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

If swallowed:

Rinse mouth and then drink plenty of water. Do not induce vomiting. Immediate medical attention required.

Note to physician

Treatment:

Treat according to symptoms (decontamination, vital functions), no known specific antidote. Strict prohibition of alcohol.

5. Fire-Fighting Measures

Flash point:	57.5 °C	(DIN 51755, closed cup)
Autoignition:	410 °C	(DIN 51794)
Lower explosion limit:	2.2 %(V)	

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Upper explosion limit: 16.0 %(V)

Self-ignition temperature:

Based on its structural properties the product is not classified as self-igniting.

Suitable extinguishing media:

water spray, dry powder, foam, carbon dioxide

Hazards during fire-fighting:

carbon oxides, nitrogen oxides

The substances/groups of substances mentioned can be released in case of fire. Under special fire conditions traces of other toxic substances are possible.

Protective equipment for fire-fighting:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

Impact Sensitivity:

Remarks:

Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Personal precautions:

Avoid inhalation. Avoid contact with the skin, eyes and clothing.

Environmental precautions:

Do not empty into drains.

Cleanup:

For small amounts: Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder). Dispose of absorbed material in accordance with regulations.

For large amounts: Pump off product.

7. Handling and Storage

Handling

General advice:

Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:

Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy. The product is combustible. Vapours are heavier than air and may accumulate in low areas and travel a considerable distance up to the source of ignition.

Storage

General advice:

Keep container tightly closed in a cool, well-ventilated place.

Storage stability:

Storage temperature: < 50 °C

Storage duration: 12 Months

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Keep under nitrogen. From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

8. Exposure Controls and Personal Protection

Personal protective equipment

Respiratory protection:

Wear the following respiratory protection if exposure limits may be exceeded: Wear a NIOSH-certified (or equivalent) respirator as necessary.

Hand protection:

Chemical resistant protective gloves, Suitable materials, butyl rubber

Eye protection:

Tightly fitting safety goggles (chemical goggles).

Body protection:

light protective clothing

General safety and hygiene measures:

Avoid contact with the skin, eyes and clothing. Under no circumstances should the product come into contact with the skin of pregnant women or be inhaled by them.

9. Physical and Chemical Properties

Form:	liquid		
Odour:	faint odour, amine-like		
Odour threshold:	No data available.		
Colour:	colourless		
pH value:	7	(200 g/l, 20 °C)	
Melting point:	-61 °C		
Boiling range:	152 - 153 °C	(DIN 53171)	
Vapour pressure:	3.77 hPa	(20 °C) (measured)	Literature data.
	23 hPa	(50 °C) (measured)	Literature data.
Density:	0.94 g/cm ³	(20 °C)	
Relative density:	0.94 - 0.95	(20 °C)	
Partitioning coefficient n-octanol/water (log Pow):	-0.85	(25 °C) (measured)	
Viscosity, dynamic:	0.86 mPa.s	(20 °C)	
	50 mPa.s	(< -10 °C)	
Particle size:			The substance / product is marketed or used in a non solid or granular form.
Solubility in water:		(20 °C) miscible	
Molar mass:	73.09 g/mol		

10. Stability and Reactivity

Conditions to avoid:

Temperature: > 50 degrees Celsius

Substances to avoid:

nitrates, strong oxidizing agents

Hazardous reactions:

Reacts with strong oxidizing agents. Reacts with halogenated compounds.

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Decomposition products:

Hazardous decomposition products: dimethylamine, Formaldehyde

11. Toxicological information

Acute toxicity

Information on: Dimethylformamide

Oral:

Type of value: LD50
Species: rat (male/female)
Value: 3,040 mg/kg (BASF-Test)

Inhalation:

Type of value: LC50
Species: rat (male/female)
Value: > 5.85 mg/l (BASF-Test)
Exposure time: 4 h
The vapour was tested.
Highest concentration available for testing.

Dermal:

Type of value: LD50
Species: rat (male/female)
Value: > 3,160 mg/kg

Irritation / corrosion

Skin:

Species: rabbit
Result: non-irritant
Method: BASF-Test

Eye:

Species: rabbit
Result: Irritant.
Method: Draize test

Sensitization:

Mouse Local Lymph Node Assay (LLNA)
Species: mouse
Result: Non-sensitizing.

Repeated dose toxicity

Information on: Dimethylformamide

Other Information:

Together with nitrosating agents (f. i. nitrites, nitrogen oxides) nitrosamines may be formed under certain conditions. Nitrosamines showed a carcinogenic effect in animal experiment. Dimethylformamide is easily absorbed through the skin and can increase the toxicity of other chemicals.

12. Ecological Information

Fish

Acute:
Fish test acute Flow through.

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Lepomis macrochirus/LC50 (96 h): 7,100 mg/l
Literature data.

Chronic:
Pimephales promelas (0.5 a): = MATC = 5 - <11 mg/L

Aquatic invertebrates

Acute:
OECD Guideline 202, part 1 static
Daphnia magna/EC50 (48 h): 13,100 mg/l
Nominal concentration.

Chronic:
Daphnia test chronic semistatic Daphnia magna (NOEC) 21 d 1,500 mg/l
Literature data.

OECD 219 static Chironomus riparius (NOEC) 28 d 3,000 mg/l

Aquatic plants

Toxicity to aquatic plants:
DIN 38412 Part 9 green algae/EC50 (72 h): > 1,000 mg/l
Nominal concentration.

Microorganisms

Toxicity to microorganisms:
aquatic
Bacteria (5 min): 12,300 - 17,500 mg/l
Literature data. Nominal concentration.

Degradability / Persistence

Biological / Abiological Degradation

Test method: OECD 301E/92/69/EEC, C.4-B (aerobic), municipal sewage treatment plant effl.
Method of analysis: DOC reduction
Degree of elimination: 100 % (21 d)

Test method: OECD 302B; ISO 9888; 88/302/EEC, part C (aerobic), activated sludge
Method of analysis: DOC reduction
Degree of elimination: 95 % (7 d)
Evaluation: Readily biodegradable (according to OECD criteria).

Bioaccumulation

OECD Guideline 305 C
carp (56 d) Bioconcentration factor 0.3 - 1.2

Other adverse effects:

Do not release untreated into natural waters.

13. Disposal considerations

Waste disposal of substance:

Must be disposed of or incinerated in accordance with local regulations.

Container disposal:

Uncleaned empties should be disposed of in the same manner as the contents.

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14. Transport Information

Land transport

TDG

Hazard class: 3
Packing group: III
ID number: UN 2265
Hazard label: 3
Proper shipping name: N,N-DIMETHYLFORMAMIDE

Sea transport

IMDG

Hazard class: 3
Packing group: III
ID number: UN 2265
Hazard label: 3
Marine pollutant: NO
Proper shipping name: N,N-DIMETHYLFORMAMIDE

Air transport

IATA/ICAO

Hazard class: 3
Packing group: III
ID number: UN 2265
Hazard label: 3
Proper shipping name: N,N-DIMETHYLFORMAMIDE

15. Regulatory Information

Federal Regulations

Registration status:

Chemical DSL, CA released / listed

WHMIS classification: B3: Combustible Liquid

D2A: Materials Causing Other Toxic Effects - Very toxic material

D2B: Materials Causing Other Toxic Effects - Toxic material



THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.

16. Other Information

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We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

MSDS Prepared by:

BASF NA Product Regulations

BASF HOTLINE (800) 454 – COPE (2673)

MSDS Prepared on: 2012/01/09

END OF DATA SHEET