

SAFETY DATA SHEET



R34489 N,N-Dimethylformam. pest 2,50LFL

000000020243

Version 1.0

Revision Date 09/30/2016

Print Date 12/20/2016

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : N,N-Dimethylformamide

Number : 000000020243

Product Use Description : Laboratory chemicals

Manufacturer or supplier's details : Honeywell International Inc.
115 Tabor Road
Morris Plains, NJ 07950-2546

For more information call : 1-800-368-0050
+1-231-726-3171
(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : **Medical: 1-800-498-5701 or +1-303-389-1414**
: **Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887**
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Form : liquid

Color : colourless

Odor : weak

Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 3
Acute toxicity, Category 4, Inhalation
Eye irritation, Category 2A
Reproductive toxicity, Category 1B

GHS Label elements, including precautionary statements

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Symbol(s)

:



Signal word

: Danger

Hazard statements

: Flammable liquid and vapour.
Causes serious eye irritation.
Harmful if inhaled.
May damage fertility or the unborn child.

Precautionary statements

: **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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 dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

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Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₃H₇NO

Chemical nature : Substance

Chemical name	CAS-No.	Concentration
N,N-Dimethylformamide	68-12-2	>=90.00 - <=100.00 %

SECTION 4. FIRST AID MEASURES

Inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.

Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.

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

Ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician.

Notes to physician

Treatment : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray
Foam

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	Carbon dioxide (CO2) Dry powder
Unsuitable extinguishing media	: Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	: Flammable. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO2) nitrogen oxides (NOx) Dimethylamine
Special protective equipment 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.
Further information	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers/tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	: Evacuate personnel to safe areas. Wear personal protective equipment. Unprotected persons must be kept away. Ensure adequate ventilation. Remove all sources of ignition.
Environmental precautions	: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Do not allow run-off from fire fighting to enter drains or water courses.
Methods for cleaning up	: Ventilate the area. Do not use sparking tools. Use explosion-proof equipment. Contain spillage, soak up with non-combustible absorbent

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material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

Handling

Handling : Wear personal protective equipment.
Use only in well-ventilated areas.

Advice on protection against fire and explosion : Keep product and empty container away from heat and sources of ignition.
No smoking.
Take precautionary measures against static discharges.
Vapours may form explosive mixtures with air.

Storage

Requirements for storage areas and containers : Store in area designed for storage of flammable liquids.
Protect from physical damage.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Store in original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures : Use with local exhaust ventilation.
Prevent vapour buildup by providing adequate ventilation during and after use.

Eye protection : Safety goggles

Hand protection : Impervious butyl rubber gloves
Gloves must be inspected prior to use.
Replace when worn.

Skin and body protection : Impervious clothing

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

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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

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
N,N-Dimethylformamide	68-12-2	TWA : Time weighted average	(10 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values

N,N-Dimethylformamide	68-12-2	SKIN_DES : Skin designation:	Can be absorbed through the skin.	2008	ACGIH:US. ACGIH Threshold Limit Values
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N,N-Dimethylformamide	68-12-2	REL : Recommended exposure limit (REL):	30 mg/m3 (10 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards
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N,N-Dimethylformamide	68-12-2	SKIN_DES : Skin designation:	Can be absorbed through the skin.	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards
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N,N-Dimethylformamide	68-12-2	SKIN_DES : Skin designation:	Can be absorbed through the skin.	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
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N,N-Dimethylformamide	68-12-2	PEL : Permissible exposure limit	30 mg/m3 (10 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
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N,N-Dimethylformamide	68-12-2	TWA : Time weighted average	30 mg/m3 (10 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
N,N-Dimethylformamide	68-12-2	SKIN_FINAL : Skin designation (Final Rule Limit applies):	Can be absorbed through the skin.	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid
Color	: colourless
Odor	: weak
pH	: 7.0 at , 20 °C
Melting point/range	: -61 °C
Boiling point/boiling range	: 152 - 153 °C at 1,013 hPa
Flash point	: 135.5 °F (57.5 °C) at 1,013.25 hPa Method: DIN 51755
Lower explosion limit	: 2.2 %(V)
Upper explosion limit	: 16 %(V)
Vapor pressure	: 3.77 hPa at 20 °C(68 °F) 23 hPa at 50 °C(122 °F)

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Density	: 0.94 g/cm ³ at 20 °C
Water solubility	: Note: completely miscible
Solubility in other solvents	: Note: Soluble in most organic solvents
Partition coefficient: n-octanol/water	: log Pow: -0.85 at 25 °C
Ignition temperature	: 410 °C
Decomposition temperature	: Note: No decomposition if used as directed.
Viscosity, dynamic	: 0.86 mPa.s at 20 °C
Molecular weight	: 73.10 g/mol

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials to avoid	: Strong oxidizing agents Reducing agents Halogenated compounds Alkali metals Nitrates
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO ₂) nitrogen oxides (NO _x) Dimethylamine

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SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: LD50: 3,010 mg/kg Species: Rat Method: OECD Test Guideline 401
Acute inhalation toxicity	: LC50: > 5.9 mg/l , vapour Exposure time: 4 h Species: Rat, male and female Method: OECD Test Guideline 403
Acute dermal toxicity	: LD50: > 3,160 mg/kg Species: Rat Method: OECD
Skin irritation	: Species: Rabbit Result: slight irritation
Eye irritation	: Species: Rabbit Result: Irritating to eyes.
Sensitisation	: Species: Mouse Result: Does not cause skin sensitisation. Method: OECD Test Guideline 406

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish	: LC50: 7,100 mg/l Exposure time: 96 h Species: Lepomis macrochirus (Bluegill sunfish)
Toxicity to daphnia and other aquatic invertebrates	: EC50: 13,100 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea)

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Method: OECD Test Guideline 202

Toxicity to algae : LC50: > 1,000 mg/l
Exposure time: 96 h
Species: Desmodesmus subspicatus (green algae)
Method: DIN 38412

Toxicity to bacteria : EC50: 12,300 - 17,500 mg/l
Exposure time: 5 min
Species: Vibrio fischerii (Bacteria)

Elimination information (persistence and degradability)

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 28 d
Bioconcentration factor (BCF): 0.3 - 1.2
Method: OECD Test Guideline 305C
Note: Bioaccumulation is unlikely.

Biodegradability : aerobic
Result: Readily biodegradable
Value: 100 %
Method: OECD 301 E

Further information on ecology**SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 2265
Proper shipping name : N,N-DIMETHYLFORMAMIDE
Class 3
Packing group III
Hazard Labels 3

IATA UN/ID No. : UN 2265
Description of the goods : N,N-DIMETHYLFORMAMIDE

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Class	: 3
Packaging group	: III
Hazard Labels	: 3
Packing instruction (cargo aircraft)	: 366
Packing instruction (passenger aircraft)	: 355
Packing instruction (passenger aircraft)	: Y344

IMDG	UN/ID No.	: UN 2265
	Description of the goods	: N,N-DIMETHYLFORMAMIDE
	Class	: 3
	Packaging group	: III
	Hazard Labels	: 3
	EmS Number	: F-E, S-D
	Marine pollutant	: no

SECTION 15. REGULATORY INFORMATION**Inventories**

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act : 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 : On the inventory, or in compliance with the inventory

Korea. Toxic Chemical Control Law (TCCL) List : On the inventory, or in compliance with the inventory

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory

New Zealand. Inventory of : On the inventory, or in compliance with the inventory

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Chemicals (NZIoC), as
published by ERMA New
Zealand

National regulatory information

SARA 302 Components	: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	: The following components are subject to reporting levels established by SARA Title III, Section 313: : N,N-Dimethylformamide 68-12-2
SARA 311/312 Hazards	: Fire Hazard Acute Health Hazard Chronic Health Hazard
CERCLA Reportable Quantity	: 100 lbs
California Prop. 65	: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
Massachusetts RTK	: N,N-Dimethylformamide 68-12-2
New Jersey RTK	: N,N-Dimethylformamide 68-12-2
Pennsylvania RTK	: N,N-Dimethylformamide 68-12-2

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 2*	2
Flammability	: 2	2
Physical Hazard	: 0	
Instability	:	0

* - Chronic health hazard

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Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

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. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group