

## N,N-Dimethylformamide-d<sub>1</sub>

### Section 1. Chemical product and company identifications

**Product code:** D-0372

**Chemical formula:** C<sub>3</sub>H<sub>6</sub>DNO

**CAS:** 2914-27-4

**CAS (unlabelled):** 68-12-2

**Synonyms:** Dimethylformamide, DMF

**Supplier / Manufacturer:**

**C/D/N Isotopes Inc.**

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Toll-Free (Canada & USA): 1-800-565-4696

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**In case of emergency:**

**TOXYSKAN HOTLINE: 1-855-780-0599**

### Section 2. Hazards identifications

**Physical state:** Liquid

**Warning:** Flammable liquid and vapour. Harmful if inhaled. Causes serious eye irritation.




**Routes of entry:** Inhalation, ingestion, skin and eyes

**GHS (Globally Harmonized System of Classification and Labelling of Chemicals):**

**GHS Classification:**

- Flammable liquids (Category 3)
- Acute toxicity, Inhalation (Category 4)
- Eye irritation (Category 2A)
- Reproductive toxicity (Category 1B)

**GHS Label elements:**

- Pictograms:   
- Signal word: Danger

**Hazards statement:**

- H226 Flammable liquid and vapour.
- H332 Harmful if inhaled.
- H319 Causes serious eye irritation.
- H360 May damage fertility or the unborn child.

**Precautionary statement:**

- P210 Keep away from heat/ hot surfaces/ sparks/ open flames/ ignition sources. No smoking.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face 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. Continue rinsing.
- P317 Get medical help.

### Section 3. Composition and information on ingredients

<u>Name</u>	<u>CAS</u>	<u>Concentration %</u>
N,N-Dimethylformamide-d <sub>1</sub>	2914-27-4	> 98

## **Section 4. First aid measures**

**Eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**Skin contact:** Wash off with soap and plenty of water. Consult a physician.

**Inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**Ingestion:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

## **Section 5. Firefighting measures**

**Flammability of the product:** Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

**Lower explosion limit:** 2.2 Vol%

**Upper explosion limit:** 15.2 Vol%

**Auto-ignition temperature:** 445 °C (833 °F)

**Flash point:** 58 °C (136 °F)

**Products of combustion:** Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides.

**Firefighting media and instructions:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.

## **Section 6. Accidental release measures**

**Personal precautions:** Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition.

**Environmental precautions:** Do not let product enter drains.

**Methods for cleaning up:** Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

## **Section 7. Handling and storage**

**Handling:** Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Provide appropriate exhaust ventilation. Keep away from sources of ignition - No smoking.

**Storage:** Store at room temperature. Adequate ventilation. Protect from heat and ignition sources.

## **Section 8. Exposure Controls, Personal Protections**

**Engineering controls:** Use mechanical exhaust or laboratory fumehood to avoid exposure.

**Eyes:** Safety glasses with side-shields conforming to NIOSH (US) or EN 166 (EU).

**Respiratory:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US).

**Hands:** Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Skin/body:** Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

## **Section 9. Physical and chemical properties (unlabelled)**

**Molecular weight:** 73.09 g/mol

**Physical status:** Liquid

**Color:** Colorless

**Odour:** Amine-like

**Density:** 0.944 g/mL

**Melting point:** -61 °C (-78 °F)

**Boiling point:** 153 °C (307 °F)

**Vapour pressure:** 3.60 hPa (2.70 mmHg) at 20 °C (68 °F)

**Vapour density:** 2.52 (Air = 1)

**Partition coefficient (octanol/water):** log Pow: -1.01

**Water solubility:** Completely miscible

## **Section 10. Stability and reactivity**

**Stability and reactivity:** Stable under recommended storage conditions.

**Incompatibility:** Strong oxidizing agents.

**Products of combustion:** Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides.

**Reactivity conditions:** Heat, flames and sparks.

## **Section 11. Toxicological information (unlabelled)**

**Toxicological data:** N,N-Dimethylformamide

### **Information on ingredients:**

<b>Name</b>	<b>CAS</b>	<b>LD<sub>50</sub></b>	<b>LC<sub>50</sub></b>
N,N-Dimethylformamide	68-12-2	Oral - Rat - 2,800 mg/kg Dermal - Rabbit - 4,720 mg/kg	Inhalation - Mouse - 2 h - 9,400 mg/m <sup>3</sup>

### **Potential acute effects**

- **Eyes:** Causes serious irritation.
- **Skin:** May be harmful if absorbed through skin. May cause skin irritation.
- **Inhalation:** Harmful if inhaled. May cause respiratory tract irritation.
- **Ingestion:** May be harmful if swallowed.

### **Potential chronic effects**

- **Carcinogenic effects:** This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (N,N-Dimethylformamide). ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- **Mutagenic effects:** Genotoxicity in vitro - Ames test - S. typhimurium - with and without metabolic activation - negative.
- **Teratogenic effects:** May damage the unborn child. Presumed human reproductive toxicant.
- **Medical conditions aggravated by overexposure:** No data available.

## **Section 12. Ecological information**

### **Ecological data:**

<b>Name</b>	<b>Results</b>	<b>Species</b>	<b>Period</b>
N,N-Dimethylformamide	6,300 mg/l LC50 7,500 mg/l EC50	Lepomis macrochirus Daphnia magna	96 h 48 h

**Effects on environment:** No data available.

**Mobility:** No data available.

**Environmental precautions:** No data available.

**Persistence and degradability:** Aerobic. Result: 100 % - Readily biodegradable. Method: OECD Test guideline 301E.

**Bioaccumulative potential:** Caprinus carpio - 56 d - 0.002 mg/l. Bioconcentration factor (BCF): 0.3 - 1.2.

## **Section 13. Disposal considerations**

**Waste disposal:** Contact a licensed professional waste disposal service to dispose of this material.

## **Section 14. Transportation information**

### **Classification DOT/IMDG/IATA label:**

**Shipping name:** N,N-Dimethylformamide

**UN number:** UN2265

**Class:** 3

**Packaging group:** III

**Additional information:** None

## Section 15. Regulatory information

### UNITED STATES: NFPA classification



Health: 2  
Flammable: 2  
Reactivity: 0  
Special conditions: None

Legend: 4: Severe, 3: High, 2: Moderate, 1: Slightly, 0: Not hazardous

### U.S. Federal regulations:

**TSCA 8(b) inventory:** N,N-Dimethylformamide  
**SARA 302/304/311/312 extremely hazardous substances:** Not Listed  
**SARA 302/304 emergency planning and notification:** Not Listed  
**SARA 302/304/311/312 hazardous chemicals:** Not Listed  
**SARA 311/312 MSDS distribution - chemical inventory - hazard identification:** Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard: Listed  
**CWA (Clean Water Act) 307:** Not Listed  
**CWA (Clean Water Act) 311:** Not Listed  
**CAA (Clean Air Act) 112 accidental release prevention:** Not Listed  
**CAA (Clean Air Act) 112 regulated flammable substances:** Not Listed  
**CAA (Clean Air Act) 112 regulated toxic substances:** Not Listed

### State regulations:

**DEA List I Chemicals (Precursor Chemicals):** Not Listed  
**DEA List II Chemicals (Essential Chemicals):** Not Listed  
**Substances in Massachusetts:** Listed  
**Dangerous substances in New Jersey:** Listed  
**New York – Dangerous substances with acute effects:** Not Listed  
**Dangerous substances in Pennsylvania – right to know:** Listed

### WHMIS (Canada):



B3 - Combustible liquid



D2A - Very toxic material causing other toxic effects  
D2B - Toxic material causing other toxic effects

## Section 16. Additional information

### References:

- ANSI Z400.1, MSDS Standard, 2001.
- Manufacturer's Material Safety Data Sheet.
- 29CFR Part1910.1200 OSHA MSDS Requirements.
- 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. -Canada
- Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List".
- Federal act on the controlled products
- Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2002.
- Toxicological repertory, HSC.
- Material safety data sheet from the components.

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**Elaborated by: Toxyscan Inc., 1-866-780-0599**

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