



## Safety Data Sheet

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation:** N,N-Dimethylformamide, Purified  
(DMF)

**Product Number:** 2-19620

**Other Identifying Product Numbers:** 2-19620-1, 2-19620-3, 2-19620-5, 2-19620-9

#### 1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

#### 1.3. Details of the Supplier of the Safety Data Sheet

**Company:** Reagents Inc.

**Address:** 4746 Sweden Road  
Charlotte, NC 28224 USA

**Telephone:** 800-732-8484

#### 1.4. Emergency Telephone Number (24 hr)

CHEMTREC (USA) 800-424-9300  
CHEMTREC (International) 1+ 703-527-3887

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### SECTION 2: Hazard(s) Identification

#### 2.1. Classification of the Substance or Mixture (in accordance with OSHA HCS 29 CFR 1910.1200)

For the full text of the Hazard and Precautionary Statements listed below, see Section 16.

| Hazard Class   | Category   | Hazard Statement | Precautionary Statements   |
|--|------------|------------------|--|
| Acute Toxicity - Oral  | Category 4 | H302             | P264, P270, P301+P312, P330, P501  |
| Acute Toxicity - Dermal  | Category 4 | H312             | P280, P302+P352, P312, P321, P362, P501  |
| Acute Toxicity - Inhalation  | Category 4 | H332             | P261, P271, P304+P340, P312  |
| Eye Damage / Irritation  | Category 1 | H318             | P280, P305+P351+P338, P310   |
| Germ Cell Mutagenicity   | Category 2 | H341             | P201, P202, P280, P308+P313, P405, P501  |
| Carcinogenicity  | Category 1 | H350             | P201, P202, P280, P308+P313, P405, P501  |
| Reproductive Toxicity  | Category 1 | H360             | P201, P202, P280, P308+P313, P405, P501  |
| Specific Target Organs/Systemic Toxicity Following Single Exposure   | Category 1 | H370             | P260, P264, P270, P307+P311, P321, P405, P501  |
| Specific Target Organs/Systemic Toxicity Following Repeated Exposure | Category 1 | H372             | P260, P264, P270, P314, P501   |
| Flammable Liquids  | Category 3 | H226             | P210, P233, P240, P241, P242, P243, P280, P303+P361+P353, P370+P378, P403+P235, P501 |

#### 2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

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### Hazard Statements:

| Hazard Number | Hazard Statement  |
|---------------|---|
| H226          | Flammable liquid and vapor.                                     |
| H302          | Harmful if swallowed.   |
| H312          | Harmful in contact with skin.                                   |
| H318          | Causes serious eye damage.                                      |
| H332          | Harmful if inhaled.   |
| H341          | Suspected of causing genetic defects.                           |
| H350          | May cause cancer.   |
| H360          | May damage fertility or the unborn child.                       |
| H370          | Causes damage to organs.  |
| H372          | Causes damage to organs through prolonged or repeated exposure. |

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### Precautionary Statements:

| Precautionary Number | Precautionary Statement  |
|----------------------|--|
| P201                 | Obtain special instructions before use.  |
| P202                 | Do not handle until all safety precautions have been read and understood.  |
| P210                 | Keep away from heat, sparks and open flame. No smoking.  |
| P233                 | Keep container tightly closed.   |
| P240                 | Ground container and receiving equipment.  |
| P241                 | Use explosion-proof equipment.   |
| P242                 | Use only non-sparking tools.   |
| P243                 | Take precautionary measures against static discharge.  |
| P260                 | Do not breathe dust, fumes or mist.  |
| P261                 | Avoid breathing dust, fumes or mist.   |
| P264                 | Wash arms, hands and face thoroughly after handling.   |
| P270                 | Do not eat, drink or smoke when using this product.  |
| P271                 | Use only outdoors or in a well-ventilated area.  |
| P280                 | Wear protective gloves and eye protection.   |
| P301+P312            | IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.  |
| P302+P352            | IF ON SKIN: Wash with plenty of soap and water.  |
| P303+P361+P353       | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.                                     |
| 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. |
| P307+P311            | IF exposed: Call a POISON CENTER or physician.   |
| P308+P313            | IF exposed or concerned: Get medical attention.  |
| P310                 | Immediately call a POISON CENTER or physician.   |
| P312                 | Call a POISON CENTER or physician if you feel unwell.  |
| P314                 | Get medical attention if you feel unwell.  |
| P321                 | Specific treatment (Wash areas of contact with water).   |
| P330                 | Rinse mouth.   |
| P362                 | Take off contaminated clothing and wash it before reuse.   |
| P405                 | Store locked up.   |
| P501                 | Dispose of contents in accordance with local, state, federal and international regulations.                                      |

### 2.3. WHMIS Classification

WHMIS classification is not included based on the recommended option (Option 4) found in the Canada Gazette Part II, Vol. 149, No.3, page 458

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### 2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

## SECTION 3: Composition / Information on Ingredients

### 3.1. Components of Substance or Mixture

| Chemical Name         | Formula                             | Molecular Weight | CAS Number | Weight% |
|-----------------------|-------------------------------------|------------------|------------|---------|
| N,N-Dimethylformamide | HCON(CH <sub>3</sub> ) <sub>2</sub> | 73.09 g/mol      | 68-12-2    | 100.00% |

## SECTION 4: First-Aid Measures

### 4.1. General First Aid Information

**Eye Contact:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Inhalation:** IF INHALED: Remove person to fresh air and keep comfortable for breathing.

**Skin Contact:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

**Ingestion:** IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.

### 4.2. Most Important Symptoms and Effects, Acute and Delayed

May cause mild irritation to areas of contact.

### 4.3. Medical Attention or Special Treatment Needed

Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water).

## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing Media

Alcohol foam, carbon dioxide, dry chemical

### 5.2. Specific Hazards Arising from the Substance or Mixture

Flammable liquid and vapor.

### 5.3. Special Protective Equipment for Firefighters

Wear protective clothing and NIOSH-approved breathing equipment appropriate for the surrounding fire.

## SECTION 6: Accidental Release Measures

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Ground container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves and eye protection.

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### 6.2. Cleanup and Containment Methods and Materials

Absorb with suitable material and dispose of in accordance with local regulations.

## SECTION 7: Handling and Storage

### 7.1. Precautions for Safe Handling and Storage Conditions

Store locked up.

## SECTION 8: Exposure Controls / Personal Protection

### 8.1. Control Parameters

| Chemical Name                   | Limit Type | Country | Exposure Limit                         | Information Source  |
|---------------------------------|------------|---------|--|---|
| N,N-Dimethylformamide (68-12-2) | TWA        | USA     | 10 ppm TWA<br>30 mg/m <sup>3</sup> TWA | U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)          |
| N,N-Dimethylformamide (68-12-2) | TLV-TWA    | USA     | 10 ppm TWA                             | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA) |

### 8.2. Exposure Controls

**Engineering Controls:** Use only outdoors or in a well-ventilated area.

**Respiratory Protection:** No specific controls are needed. Normal room ventilation is adequate

**Skin Protection:** Wear protective gloves and eye protection.

**Eye Protection:** Wear protective gloves and eye protection.

### 8.3. Personal Protective Equipment

Wear protective gloves and eye protection.

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### SECTION 9: Physical and Chemical Properties

#### 9.1. Basic Physical and Chemical Properties

**Appearance:** Colorless to slightly yellow liquid

**Physical State:** Liquid

**Odor:** Fishy, unpleasant

**Odor Threshold:** Data not available.

**pH:** Data not available.

**Melting/Freezing Point:** -60.5°C

**Initial Boiling Point /Range:** 152 - 153°C

**Flash Point:** 58°C

**Evaporation Rate:** 0.17 (butyl acetate = 1)

**Flammability:** Data not available.

**Flammability/Explosive Limits:** Data not available.

**Vapor Pressure:** 0.035 hPa at 20°C

**Vapor Density:** 2.51

**Relative Density:** 0.94

**Solubility:** Miscible at 20°C

**Partition Coefficient (n-Octanol/Water):** -1.028

**Auto-Ignition Temperature:** Data not available.

**Decomposition Temperature:** Data not available.

**Viscosity:** Data not available.

**Explosive Properties:** Data not available.

**Oxidizing Properties:** Data not available.

### SECTION 10: Stability and Reactivity

#### 10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

#### 10.2. Possibility of Hazardous Reactions

Data not available.

#### 10.3. Conditions to Avoid and Incompatible Materials

Keep away from heat, sparks and open flame. No smoking. Keep container tightly closed.

#### 10.4. Hazardous Decomposition Products

May emit irritating fumes when heated to decomposition.



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### SECTION 11: Toxicological Information

#### 11.1. Information on Toxicological Effects

**Acute Toxicity - Oral Exposure:**

Harmful if swallowed. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. Dispose of contents in accordance with local, state, federal and international regulations.

**Acute Toxicity - Dermal Exposure:**

Harmful in contact with skin. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Specific treatment (Wash areas of contact with water). Take off contaminated clothing and wash it before reuse. Dispose of contents in accordance with local, state, federal and international regulations.

**Acute Toxicity - Inhalation Exposure:**

Harmful if inhaled. Avoid breathing dust, fumes or mist. Use only outdoors or in a well-ventilated area. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

**Acute Toxicity - Other Information:**

Data not available.

**Skin Corrosion and Irritation:**

Not applicable.

**Serious Eye Damage and Irritation:**

Causes serious eye damage. Wear protective gloves and eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

**Respiratory Sensitization:**

Not applicable.

**Skin Sensitization:**

Not applicable.

**Germ Cell Mutagenicity:**

Suspected of causing genetic defects. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Carcinogenicity:**

May cause cancer. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Reproductive Toxicity:**

May damage fertility or the unborn child. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.



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### Specific Target Organ Toxicity from Single Exposure:

Causes damage to organs. Do not breathe dust, fumes or mist. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF exposed: Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water). Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

### Specific Target Organ Toxicity from Repeated Exposure:

Causes damage to organs through prolonged or repeated exposure. Do not breathe dust, fumes or mist. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Get medical attention if you feel unwell. Dispose of contents in accordance with local, state, federal and international regulations.

### Aspiration Hazard:

Not applicable.

### Additional Toxicology Information:

Data not available.

## SECTION 12: Ecological Information

### 12.1. Ecotoxicity

Not applicable.

### 12.2. Persistence and Degradability

Data not available.

### 12.3. Bioaccumulative Potential

Data not available.

### 12.4. Mobility in Soil

Data not available.

### 12.5. Other Adverse Ecological Effects

Data not available.

## SECTION 13: Disposal Considerations

### 13.1. Waste Treatment Methods

Data not available.

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### SECTION 14: Transportation Information

#### 14.1. Transportation by Land - Department of Transportation (DOT, United States of America)

**UN Number:** UN2265

**Proper Shipping Name:** N,N-Dimethylformamide

**Hazard Class:** 3

**Packing Group:** III

**Hazard Placard Labels:**



### SECTION 15: Regulatory Information

#### 15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.

#### 15.2. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Not listed.

#### 15.3. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

N,N-Dimethylformamide (CAS # 68-12-2): 100 lb final RQ; 45.4 kg final RQ

#### 15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

N,N-Dimethylformamide (CAS # 68-12-2): 1.0 % de minimis concentration

#### 15.5. Massachusetts Right-to-Know Substance List

N,N-Dimethylformamide (CAS # 68-12-2): Present

#### 15.6. Pennsylvania Right-to-Know Hazardous Substances

N,N-Dimethylformamide (CAS # 68-12-2): Present

#### 15.7. New Jersey Worker and Community Right-to-Know Components

N,N-Dimethylformamide (CAS # 68-12-2): sn 0759

N,N-Dimethylformamide (CAS # 68-12-2): SN 0759 TPQ: 500 lb

N,N-Dimethylformamide (CAS # 68-12-2): teratogen

#### 15.8. California Proposition 65

Not listed.

#### 15.9. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

N,N-Dimethylformamide (CAS # 68-12-2): Present



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### 15.10. United States of America Toxic Substances Control Act (TSCA) List

N,N-Dimethylformamide (CAS # 68-12-2): Present

### 15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Not listed.

## SECTION 16: Other Information

### 16.1. Full Text of Hazard Statements and Precautionary Statements

Flammable liquid and vapor. Harmful if swallowed. Harmful in contact with skin. Causes serious eye damage. Harmful if inhaled. Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks and open flame. No smoking. Keep container tightly closed. Ground container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust, fumes or mist. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye protection.

IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep 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: Call a POISON CENTER or physician. Get medical attention if you feel unwell. Specific treatment (Wash areas of contact with water). Rinse mouth. Take off contaminated clothing and wash it before reuse. In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.

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

Dispose of contents in accordance with local, state, federal and international regulations.

### 16.2. Miscellaneous Hazard Classes

**Canadian Carcinogenicity Hazard Class:** Not Applicable.

**Physical Hazards Not Otherwise Classified (PHNOC):** Not Applicable.

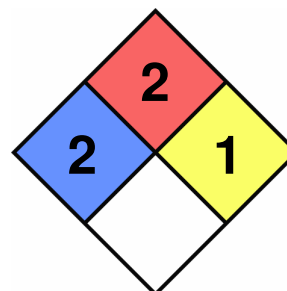
**Health Hazards Not Otherwise Classified (HHNOC):** Not Applicable.

**Biohazardous Infectious Materials Hazard Class:** Not Applicable.

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### 16.3. National Fire Protection Association (NFPA) Rating

Health: 2  
Flammability: 2  
Reactivity: 1  
Special Hazard:



### 16.4. Document Revision

Last Revision Date: 8/31/2015

### DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and REAGENTS, INC. assumes no legal responsibility or liability whatsoever resulting from its use.