



Registered Off. : 101-A, Deep Enclave, Pocket 'D', Ashok Vihar, Phase-III, Delhi-110 052 (India)
Corporate Off. : 152, Vardhman City Centre, Near Shakti Nagar Underbridge, Delhi-110052 (India)
Works : Plot No.1022, Modern Industrial Estate, Bahadurgarh-124507, Haryana (India)
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N, N-DIMETHYLFORMAMIDE

1. Product Identification

Synonyms: DMF; Dimethylformamide; Formyldimethylamine; Formamide, N,N-Dimethyl-

CAS No.: 68-12-2

Molecular Weight: 73.09

Chemical Formula: $\text{HCON}(\text{CH}_3)_2$

Product Codes: 31190

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Dimethylformamide	68-12-2	98 - 100%

3. Hazards Identification

Potential Health Effects

Inhalation: Causes irritation to respiratory tract. Symptoms may include coughing, shortness of breath. Causes liver, kidney, cardiovascular system and central nervous system disorders. May cause abdominal pain, loss of appetite, nausea, weakness, dizziness, headache, constipation, vomiting, diarrhea, increased blood pressure anxiety, and palpitations.

Ingestion: Causes irritation to the gastrointestinal tract. Symptoms parallel inhalation.

Skin Contact: Causes irritation to skin. Symptoms include redness, itching and pain. Can cause skin problems. Absorption through the skin can readily occur, resulting in symptoms paralleling inhalation.

Eye Contact: Causes irritation, redness, and pain. May cause severe irritation and blurred vision.

Chronic Exposure: Repeated skin contact may cause dermatitis. Repeated or prolonged exposure to vapors may cause damage to the liver and kidney.

4. First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

5. Fire Fighting Measures

Fire: Flash point: 58C (136F) CC

Autoignition temperature: 445C (833F)

Flammable limits in air % by volume: lel: 2.2; uel: 15.2

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Explosion: Above the flash point, explosive vapor-air mixtures may be formed. Vapors can flow along surfaces to distant ignition source and flash back. Sealed containers may rupture when heated. Contact with strong oxidizers may cause fire. Sensitive to static discharge.

Fire Extinguishing Media: Dry chemical, alcohol foam or carbon dioxide.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas.

8. Exposure Controls/Personal Protection

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airtight hood, or full-face piece self-contained breathing apparatus.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance: Clear, colorless liquid.

Odor: Fishy, pungent.

Solubility: Completely miscible with water.

Specific Gravity: 0.949 @ 20C (68F).

pH: 6.7

% Volatiles by volume @ 21C (70F): 100

Boiling Point: 153C (307F)

Melting Point: -61C (-78F)

Vapor Density (Air=1): 2.5

Vapor Pressure (mm Hg): 2.7 @ 20C (68F)

Evaporation Rate (BuAc=1): 0.17

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10. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products: May form ammonia, carbon oxides, amines, and nitrogen oxides when heated to decomposition.

Hazardous Polymerization: Will not occur.

Incompatibilities: Bromine, carbon tetrachloride, chromic anhydride, 2,5-dimethylpyrrole, phosphorus oxychloride, hexachlorobenzene, magnesium nitrate, methylene diisocyanate, phosphorus trioxide, triethyl aluminum, organic nitrates, acidic and alkaline materials, and other halogenated compounds.

Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

11. Toxicological Information : Oral rat LD50: 2,800 mg/kg. skin rabbit LD50: 4720 mg/kg.

Investigated as a tumorigen, mutagen, reproductive effector.

12. Ecological Information

Environmental Fate: When released into the soil, this material is expected to readily biodegrade. When released into water, this material is expected to readily biodegrade. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals.

Environmental Toxicity: The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Land

Proper Shipping Name: N,N-DIMETHYLFORMAMIDE

Hazard Class: 3

UN/NA: UN2265

Packing Group: III

Information reported for product/size: 430LB

International (Water)

Proper Shipping Name: N,N-DIMETHYLFORMAMIDE

Hazard Class: 3

UN/NA: UN2265

Packing Group: III

Information reported for product/size: 430LB

15. Regulatory Information

SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No

Reactivity: No (Pure / Liquid)

16. Other Information

Product Use:

Laboratory Reagent.

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