MSDS FOR N,N-DIMETHYLFORMAMIDE

1. Product Identification

Synonyms: DMF; Dimethylformamide
CAS No.: 68-12-2
Molecular Weight: 73.09
Chemical Formula: HCON(CH3)2

---

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Dimethylformamide	68-12-2	99.9%

3. Hazards Identification

Hazards sort:no.3.3 high flash point flammable liquid.
Immerge approach: swallow, inhale, absorb through skin.
Health harmful: hasty toxic, mostly high spur symptom: headache, anxiety, sickness, abdominal pain, constipation, liver damager and increase blood pressure, absorb through skin. Slow symptom: spur skin mucous membrane, nerve debility and decrease blood pressure. sickness, stomachache, constipation and liver function change.
environment harmful: can pollute air, water environment and water head.
Explore dangerous: flammable, toxic

---

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Swallow:
wash stomach by 2.5-3% sodium sulphate solution, catharsis. Get medical attention.

Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally.

---

5. Fire Fighting Measures

hazard character: contact with fire, high heat can fire and explore. can bleed toxic gas through high heat or fire. With dense sulphuric acid can emit smoke. If high heat container inner pressure increase, can split and explore.

Harmful fire fruit;
carbon oxides, carbon monoxide, and nitrogen oxides
Fire Extinguishing Media:
Cut off giveaway source, cool container with water, extinguish with carbon dioxide spume.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Water spray may be used to protect person who plug leak.

---

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! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

---

7. Handling and Storage

handling attention: tight while producing, handle tightly, pay attention ventilation.
Storage attention; 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. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. observe all warnings and

precautions listed for the product. Establish warning label in storage place, prohibit unnecessary persom coming in.

---

8. Exposure Controls/Personal Protection

Project control: tight while producing, handle tightly, pay attention ventilation.
Personal Respirators:
If the exposure limit is exceeded, wear a supplied air, full-face piece respirator, air lined hood, or full-face piece self-contained breathing apparatus.
Body protection: Wear impervious protective clothing.
Hand protection: wear protective gloves.
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.
Other Control Measures:
Provide clean work clothes daily to workers who regularly use this material. Direct workers to shower before changing into street clothes. No smoking in working place.

---

9. Physical and Chemical Properties

Appearance:
Clear, colorless liquid.
Solubility:
Completely miscible with water. Dissolve with most organic dissolvent.
Specific Gravity:
0.95
Boiling Point:
152.8C
Melting Point:
-61C
Vapor Density (Air=1):
2.51
Vapor Pressure (kpa):
3.46/60C
Auto ignition temperature:
445C
Flammable limits in air % by volume:
Lel:2.2 uel:15.2

---

10. Stability and Reactivity

Stability:
Stable
avoid contact condition:
no information
Hazardous Decomposition Products:
May form carbon oxides, carbon monoxide, and nitrogen oxides
Hazardous Polymerization:
Will not occur.

---

11. Toxicological Information

hasty toxic:Oral big rat LD50: 4000 mg/kg. skin rabbit LD50: 4720 mg/kg.
inhale small rat LC50: 9400 mg/m3 2h
chronic toxic: spur skin mucous membrane, nerve debility and decrease blood pressure. sickness, stomachache, constipation and liver function change.
Spur: spur skin

---

12. Ecological Information

Environmental Toxicity: this material is very harmful to the environment, should pay attention the pollution to the water, soil and air.

---

13. Disposal Considerations

disposal method: use superfluous water to dilute, and dispose into waste water system.
Attention: dispose according to state and local rules.

---

14. Transport Information

hazard goods no.:33627

un:2265

packing mark: flammable liquid, toxic

Packing Group: III
attention: pack integrally, transport steadily, do not make container be leaked out, collapsed, crashed and damaged in the transportation.