# Material Safety Data Sheet
## N,N-Dimethylacetamide

ACC# 07680

## Section 1 - Chemical Product and Company Identification

**MSDS Name:** N,N-Dimethylacetamide
**Catalog Numbers:** AC115695000, AC167785000, AC610311000, BP2609-100, D135-500, O2434-4
**Synonyms:** Dimethylacetamide; N,N-Dimethylacetamide; Acetic acid dimethylamide; Dimethylamide acetate; DMAC; Acetdimethylamide; Dimethylacetone amide; DMA; Acetyl dimethylamide.
**Company Identification:**

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

**For information, call:** 201-796-7100
**Emergency Number:** 201-796-7100
**For CHEMTREC assistance, call:** 800-424-9300
**For International CHEMTREC assistance, call:** 703-527-3887

## Section 2 - Composition, Information on Ingredients

| CAS# | Chemical Name | Percent | EINECS/ELINCS |
|---|---|---|---|
| 127-19-5 | N,N-Dimethylacetamide | 99 | 204-826-4 |

## Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: colorless liquid. Flash Point: 63 deg C.
**Warning!** Harmful if inhaled. May cause harm to the unborn child. May cause eye, skin, and respiratory tract irritation. **Combustible liquid and vapor.** May be harmful if absorbed through the skin. May cause liver damage. Hygroscopic (absorbs moisture from the air).
**Target Organs:** Liver, reproductive system.

**Potential Health Effects**
**Eye:** May cause eye irritation.
**Skin:** May cause skin irritation. May be absorbed through the skin. If absorbed, causes symptoms similar to those of ingestion. Not expected to cause an allergic skin reaction.
**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May cause auditory and visual hallucinations, disorientation, sweating, and weakness.
**Inhalation:** Causes respiratory tract irritation. May cause effects similar to those described for ingestion. Inhalation at high concentrations may cause CNS depression and asphixiation. DMAC concentrations between 0 and 2 ppm, with occasional excursions between 11 and 34 ppm, in a polymer manufacturing operation caused dizziness, lethargy, and weakness.
**Chronic:** Chronic ingestion may cause liver damage. May cause reproductive and fetal effects. Repeated dermal applications to dogs of DMAC at 4 mg/kg body weight for 6 weeks produced extensive fatty infiltration of liver tissue. Daily exposure of rats at 195 ppm DMAC for 6 months produced liver damage.

## Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
**Skin:** In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
**Ingestion:** If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
**Notes to Physician:** Treat symptomatically and supportively.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Containers may explode when heated. Combustible liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.
**Extinguishing Media:** Use foam, dry chemical, or carbon dioxide.
**Flash Point:** 63 deg C ( 145.40 deg F)
**Autoignition Temperature:** 335 deg C ( 635.00 deg F)
**Explosion Limits, Lower:**1.8 @ 100°C
**Upper:** 11.5 @ 160°C

**NFPA Rating:** (estimated) Health: 2; Flammability: 2; Instability: 0

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.
**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat and flame. Avoid breathing vapor or mist. Destroy contaminated leather clothing.
**Storage:** Keep away from sources of ignition. Do not store in direct sunlight. Store in a tightly closed container. Keep under a nitrogen blanket. Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
**Exposure Limits**

| Chemical Name | ACGIH | NIOSH | OSHA - Final PELs |
|---|---|---|---|
| N,N-Dimethylacetamide | 10 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous r oute | 10 ppm TWA; 35 mg/m3 TWA 300 ppm IDLH | 10 ppm TWA; 35 mg/m3 TWA |

**OSHA Vacated PELs:** N,N-Dimethylacetamide: 10 ppm TWA; 35 mg/m3 TWA
**Personal Protective Equipment**
**Eyes:** Wear chemical splash goggles.
**Skin:** Wear butyl rubber gloves to prevent skin exposure.
**Clothing:** Wear appropriate protective clothing to prevent skin exposure.
**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## Section 9 - Physical and Chemical Properties

**Physical State:** Liquid
**Appearance:** colorless
**Odor:** ammonia-like
**pH:** Not available.
**Vapor Pressure:** 1.5 mm Hg @ 20 deg C
**Vapor Density:** 3.01 (air=1)
**Evaporation Rate:**0.17 (butyl acetate=1)
**Viscosity:** 1.02 mPa s 20 C
**Boiling Point:** 165 deg C
**Freezing/Melting Point:**-20 deg C
**Decomposition Temperature:**> 350 deg C
**Solubility:** Soluble.
**Specific Gravity/Density:**0.94 @ 20°C
**Molecular Formula:**C4H9NO
**Molecular Weight:**87.12

## Section 10 - Stability and Reactivity

**Chemical Stability:** Hygroscopic: absorbs moisture or water from the air.
**Conditions to Avoid:** Ignition sources, excess heat.
**Incompatibilities with Other Materials:** Strong oxidizing agents, strong acids, ammonia, phenols, isocyanates, cresol, nonoxidizing mineral acids.
**Hazardous Decomposition Products:** Nitrogen oxides, carbon monoxide, carbon dioxide, acetic acid, dimethylamine.
**Hazardous Polymerization:** Will not occur.

## Section 11 - Toxicological Information

**RTECS#:**
**CAS#** 127-19-5: AB7700000
**LD50/LC50:**
CAS# 127-19-5:
Draize test, rabbit, eye: 100 mg Mild;
Inhalation, mouse: LC50 = 7200 mg/m3;

Inhalation, rat: LC50 = 2475 ppm/1H;
Oral, mouse: LD50 = 4620 mg/kg;
Oral, rat: LD50 = 4300 mg/kg;
Skin, rabbit: LD50 = 2240 mg/kg;
Skin, rat: LD50 = >2 gm/kg;

.
Inhalation 1 hour, LC50, female rat: 8.81 mg/L (data from DuPont).
**Carcinogenicity:**
CAS# 127-19-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** Jaundice was observed in workers as a result of repeated exposures at 20 to 25 ppm DMAC, but appreciable skin penetration undoubtedly contributed to this effect.
**Teratogenicity:** Teratogenic effects from dermal application of DMAC were reported in rats when DMAC was applied on gestation days 10 and 11 at a total dose of 2400 mg/kg body weight.
**Reproductive Effects:** Adverse reproductive effects have occurred in experimental animals.Some tests in adult animals have shown that DMAC may cause changes to the testes only at levels which produce other toxic effects in the adult animal. Reproductive data on adult animals show no change in reproductive performance.See actual entry in RTECS for complete information.
**Mutagenicity:** See actual entry in RTECS for complete information.
**Neurotoxicity:** No information found
**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** Fish: Fathead Minnow: 1500 mg/L; 96hr LC50; Flow-through No data available.
**Environmental:** Terrestrial: Will display very high mobility. Will not volatilize from moist soil to the atmosphere. Aquatic: Will not adsorb to sediment and suspended organic matter. Atmospheric: May undergo a rapid gas-phase reaction with photochemically produced hydroxyl radicals. Half-life 6.1 hours.
**Physical:** Will biodegrade. Will not bioconcentrate.
**Other:** No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
**RCRA P-Series:** None listed.
**RCRA U-Series:** None listed.

## Section 14 - Transport Information

| | US DOT | Canada TDG |
|---|---|---|
| **Shipping Name:** | TOXIC LIQUIDS, ORGANIC, N.O.S. | Toxic, Liquid, Organic, N.O.S. |
| **Hazard Class:** | 6.1 | 6.1 |
| **UN Number:** | UN2810 | UN2810 |
| **Packing Group:** | III | III |

## Section 15 - Regulatory Information

### US FEDERAL

**TSCA**
CAS# 127-19-5 is listed on the TSCA inventory.
**Health & Safety Reporting List**
None of the chemicals are on the Health & Safety Reporting List.
**Chemical Test Rules**
CAS# 127-19-5: Testing required by manufacturers, processors
**Section 12b**
CAS# 127-19-5: Section 4
**TSCA Significant New Use Rule**
None of the chemicals in this material have a SNUR under TSCA.
**CERCLA Hazardous Substances and corresponding RQs**
None of the chemicals in this material have an RQ.
**SARA Section 302 Extremely Hazardous Substances**
None of the chemicals in this product have a TPQ.
**SARA Codes**
CAS # 127-19-5: immediate, delayed, fire.
**Section 313** No chemicals are reportable under Section 313.
**Clean Air Act:**
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
**Clean Water Act:**
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
**OSHA:**
None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 127-19-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

## European/International Regulations

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**

T

**Risk Phrases:**

R 20/21 Harmful by inhalation and in contact with skin.
R 61 May cause harm to the unborn child.

**Safety Phrases:**

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 53 Avoid exposure - obtain special instructions before use.

**WGK (Water Danger/Protection)**

CAS# 127-19-5: 1

**Canada - DSL/NDSL**

CAS# 127-19-5 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of B3, D2A, D2B, D1B.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

CAS# 127-19-5 is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 12/12/1997
**Revision #7 Date:** 11/18/2003