

Material Safety Data Sheet

| HAZARD WARNINGS | RISK PHRASES | PROTECTIVE CLOTHING |
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|  | Irritating to skin, eyes, and the respiratory system. Harmful compound, minimize exposure. Hygroscopic -- keep container tightly sealed. Store under inert gas. |  |

Section I. Chemical Product and Company Identification

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| Chemical Name | N-Methylacetamide | | |
| Catalog Number | M0133 | Supplier | TCl America 9211 N. Harbortgate St. Portland OR 1-800-423-8616 |
| Synonym | N-Acetyl-N-methylamine | | |
| Chemical Formula | CH ₃ CONHCH ₃ | | |
| CAS Number | 79-16-3 | In case of Emergency Call | Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International) |

Section II. Composition and Information on Ingredients

| Chemical Name | CAS Number | Percent (%) | TLV/PEL | Toxicology Data |
|-------------------|------------|-------------------|----------------|--|
| N-Methylacetamide | 79-16-3 | Min. 99.0 (GC) | Not available. | Rat LD ₅₀ (oral) 5000 mg/kg Rat LD ₅₀ (intraperitoneal) 2750 mg/kg Rat LD ₅₀ (subcutaneous) 3600 mg/kg Mouse LD ₅₀ (intraperitoneal) 4380 mg/kg |

Section III. Hazards Identification

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| Acute Health Effects | Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound. |
| Chronic Health Effects | CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Reproductive Effects. Rat TDLo Intraperitoneal 2 gm/kg, femal 15-16 days of pregnancy. TOXIC Effects : Effects on Embryo or Fetus - Fetotoxicity Effects on Fertility - Post-implantation Rat TDLo Skin 1200 mg/kg, female 10-11 days of pregnancy. TOXIC Effects : Effects on Embryo or Fetus - Fetal death. Mouse TDLo Oral 130 mg/kg female 6-18 days of pregnancy TOXIC Effects : Effects on Fertility - Post-implantations mortality |

Section IV. First Aid Measures

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| Eye Contact | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. COLD water may be used. Get medical attention. |
| Skin Contact | In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. COLD water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. |
| Inhalation | If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve. |
| Ingestion | INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. |

Section V. Fire and Explosion Data

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| Flammability | May be combustible at high temperature. | Auto-Ignition | 490 °C (914 °F) |
| Flash Points | 115 °C (239 °F). | Flammable Limits | LOWER: 3.2% UPPER: 18.1% |
| Combustion Products | These products are toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂). | | |
| Fire Hazards | Not available. | | |
| Explosion Hazards | Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. | | |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations. | | |

Section VI. Accidental Release Measures

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| Spill Cleanup Instructions | Irritating material. Harmful material. Hygroscopic material. Store material under inert gas. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. |
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Section VII. Handling and Storage

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| Handling and Storage Information | IRRITANT. HARMFUL. HYGROSCOPIC. STORE UNDER INERT GAS. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe dust. |
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Section VIII. Exposure Controls/Personal Protection

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| Engineering Controls | Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. | | |
| Personal Protection | Splash goggles. Lab coat. Dust respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent. | | |
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| Exposure Limits | Not available. | | |

Section IX. Physical and Chemical Properties

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| Physical state @ 20°C | Solid. (Colorless, Lumps.) | Solubility | Soluble in water, various organic solvents etc. Benzene, Acetone, Ether, Alcohol. |
| Specific Gravity | 0.957 (water=1) | | |
| Molecular Weight | 73.09 | Partition Coefficient | Not available. |
| Boiling Point | 204 to 205 °C (399.2 to 401 °F) | Vapor Pressure | Not applicable. |
| Melting Point | 30 °C (86 °F) (freezing point) | Vapor Density | Not available. |
| Refractive Index | Not available. | Volatility | Not available. |
| Critical Temperature | Not available. | Odor | Not available. |
| Viscosity | Not available. | Taste | Not available. |

Section X. Stability and Reactivity Data

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| Stability | This material is stable if stored under proper conditions. (See Section VII for instructions) | | |
| Conditions of Instability | Avoid excessive heat and light. | | |
| Incompatibilities | Reactive with strong oxidizing agents. | | |

Section XI. Toxicological Information

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| RTECS Number | AC5960000 |
| Routes of Exposure | Eye Contact. Ingestion. Inhalation. |
| Toxicity Data | Rat LD ₅₀ (oral) 5000 mg/kg Rat LD ₅₀ (intraperitoneal) 2750 mg/kg Rat LD ₅₀ (subcutaneous) 3600 mg/kg Mouse LD ₅₀ (intraperitoneal) 4380 mg/kg |
| Chronic Toxic Effects | CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Reproductive Effects. Rat TDLo Intraperitoneal 2 gm/kg, femal 15-16 days of pregnancy. TOXIC Effects: Effects on Embryo or Fetus - Fetotoxicity Effects on Fertility - Post-implantation Rat TDLo Skin 1200 mg/kg, female 10-11 days of pregnancy. TOXIC Effects: Effects on Embryo or Fetus - Fetal death. Mouse TDLo Oral 130 mg/kg female 6-18 days of pregnancy TOXIC Effects: Effects on Fertility - Post-implantations mortality |
| Acute Toxic Effects | Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound. |

Section XII. Ecological Information

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| Ecotoxicity | Not available. |
| Environmental Fate | N-Methylacetamide's production and use as a solvent may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 0.44 mm Hg at 23 deg C indicates N-methylacetamide will exist solely as a vapor in the ambient atmosphere. Vapor-phase N-methylacetamide will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 3.1 days. If released to soil, N-methylacetamide is expected to have very high mobility based upon an estimated Koc of 6. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 4.23X10 ⁻⁸ atm-cu m/mole. If released into water, N-methylacetamide is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. N-Methylacetamide (at 100 ppm), exposed to an activated sludge inoculum for two weeks under aerobic conditions, was categorized as biodegradable. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant. An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low. Hydrolysis is not expected to occur due to the slow rate of reaction for amide functional groups. Occupational exposure to N-methylacetamide may occur through inhalation and dermal contact with this compound at workplaces where N-methylacetamide is produced or used. |

Section XIII. Disposal Considerations

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| Waste Disposal | Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance. |
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Section XIV. Transport Information

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| DOT Classification | Not a DOT controlled material (United States). |
| PIN Number | Not applicable. |
| Proper Shipping Name | Not applicable. |
| Packing Group (PG) | Not applicable. |
| DOT Pictograms |  |

Section XV. Other Regulatory Information and Pictograms

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| TSCA Chemical Inventory (EPA) | This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list. |
| WHMIS Classification (Canada) | On DSL |
| EINECS Number (EEC) | 201-182-6 |
| EEC Risk Statements | R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. |

Continued on Next Page**Emergency phone number (800) 424-9300**

Section XVI. Other Information**Version 1.0****Validated on 1/18/2006.****Printed 1/18/2006.****Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.