TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**Toxic compound, do not ingest or inhale. Avoid all contact with this material.** **Corrosive to eyes and skin on contact.** **Combustible material; avoid heat and sources of ignition.** **Hygroscopic -- keep container tightly sealed.** **Store under nitrogen.**	

Section I. Chemical Product and Company Identification

Chemical Name **1-Methylpiperazine**

Catalog Number	M0553
Synonym	N-Methylpiperazine
Chemical Formula	$C_5H_{12}N_2$
CAS Number	109-01-3

Supplier
TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

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
1-Methylpiperazine	109-01-3	Min. 98.0 (GC)	Not available.	Rat LD_{50} (oral) 2830µl/kg Mouse LC_{50} (inhalation) 2740mg/m 3/2H Rabbit LD_{50} (dermal) 1490mg/kg

Section III. Hazards Identification

Acute Health Effects

Corrosive to skin and eyes on contact. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death.

Chronic Health Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance is toxic to lungs, the nervous system, mucous membranes.
Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section IV. First Aid Measures

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. Get medical attention immediately.

Skin Contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

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

DO NOT INDUCE VOMITING. 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. SEEK IMMEDIATE MEDICAL ATTENTION in case of ingestion of a radioactive material.

Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	Not available.
Flash Points	39°C (102.2°F).	Flammable Limits	Not available.

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.

Continued on Next Page

Emergency phone number (800) 424-9300

Fire Fighting Media and Instructions	Combustible liquid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Consult with local fire authorities before attempting large scale fire-fighting operations.

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Toxic material. Corrosive material. Combustible material. Hygroscopic material. Store under nitrogen. Keep away from heat. Mechanical exhaust required. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT get water inside container. DO NOT touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	TOXIC. CORROSIVE. COMBUSTIBLE. HYGROSCOPIC. STORE UNDER NITROGEN. Keep locked up.. Keep container dry. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, acids.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Face shield. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. 
Exposure Limits	Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid.	Solubility	Not available.
Specific Gravity	0.902 (water=1)		
Molecular Weight	100.16	Partition Coefficient	Not available.
Boiling Point	135 to 138°C (275 to 280.4°F)	Vapor Pressure	Not available.
Melting Point	Not available.	Vapor Density	3.5 (Air = 1)
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

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 oxidizing agents, acids, acid chlorides, and acid anhydrides, carbon dioxide (CO_2).

Section XI. Toxicological Information

RTECS Number	TM1225000
Routes of Exposure	Eye Contact. Ingestion. inhalation. Skin contact.
Toxicity Data	Rat LD_{50} (oral) 2830µl/kg Mouse LC_{50} (inhalation) 2740mg/m^3/2H Rabbit LD_{50} (dermal) 1490mg/kg
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Not available. **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : Not available. **DEVELOPMENTAL TOXICITY**: Not available. The substance is toxic to lungs, the nervous system, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

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

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Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Not available.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissove 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 locl regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification	CLASS 3: Combustible liquid. CLASS 6.1: Poisonous material. CLASS 8: Corrosive material.
PIN Number	UN3286
Proper Shipping Name	Flammable liquid, toxic, corrosive, n.o.s.
Packing Group (PG)	II
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS E: Corrosive liquid.
EINECS Number (EEC)	203-639-5
EEC Risk Statements	R10- Flammable. R18- In use, may form flammable/explosive vapor-air mixture. R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R34- Causes burns.
Japanese Regulatory Data	Not available.

Section XVI. Other Information

Version 1.0
Validated on 10/31/2001.
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Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, 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.