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MATERIAL SAFETY DATA SHEET (MSDS)**PENTAMETHYLENE TETRAZOLE (PENTYLENETETRAZOLE)****1 - Chemical Product**

Product Name: 1 5-Pentamethylenetetrazole
Synonym: Pentylenetetrazole; 6,7,8,9-Tetrahydro-5H-Tetrazoloazepin

Cas no: 54-95-5

Product Coad: P0154600100

Molecular Formula: C₆H₁₀N₄
Molecular Weight: 138.17

2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
54-95-5	1,5-Pentamethylenetetrazole	98	200-219-3

3 - HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

Toxic by inhalation, in contact with skin and if swallowed. Moisture sensitive.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin irritation. The toxicological properties of this material have not been fully investigated.

Ingestion: Harmful if swallowed. May cause irritation of the digestive tract.

Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.

Chronic: Repeated or prolonged exposure may cause CNS stimulation.

4 - FIRST AID MEASURES

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

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.

Extinguishing Media: Use agent most appropriate to extinguish fire. Do NOT get water inside containers. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation. Do not get water inside containers.

7 - HANDLING and STORAGE

Handling: Wash thoroughly after handling. Use with adequate ventilation.

Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Do not allow contact with water. Keep from contact with moist air and steam.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

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Use adequate ventilation to keep airborne concentrations low.

Exposure Limits CAS# 54-95-5: Personal Protective Equipment Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective 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.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Crystals

Color: white

Odor: None reported.

pH: Not available.

Vapor Pressure: Not available.

Viscosity: Not available.

Boiling Point: 194 deg C @ 12.00mmHg

Freezing/Melting Point: 59.00 - 61.00 deg C

Autoignition Temperature: Not available.

Flash Point: Not available.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition Temperature:

Solubility in water: freely soluble in most organic solvents

Specific Gravity/Density:

Molecular Formula: C₆H₁₀N₄

Molecular Weight: 138.17

10 - STABILITY AND REACTIVITY**Chemical Stability:**

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, dust generation, moisture, excess heat.

Incompatibilities with Other Materials:

Oxidizing agents.

Hazardous Decomposition Products:

Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.

Hazardous Polymerization: Has not been reported.

11 - TOXICOLOGICAL INFORMATION**RTECS#:**

CAS# 54-95-5: XF8225000 LD50/LC50:

CAS# 54-95-5: Oral, mouse: LD50 = 88 mg/kg; Oral, rat: LD50 = 140 mg/kg.

Carcinogenicity:

1,5-Pentamethylenetetrazole - Not listed by ACGIH, IARC, or NTP.

Other:

See actual entry in RTECS for complete information.

12 - ECOLOGICAL INFORMATION**13 - DISPOSAL CONSIDERATIONS**

Dispose of in a manner consistent with federal, state, and local regulations.

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MATERIAL SAFETY DATA SHEET (MSDS)**PENTAMETHYLENE TETRAZOLE (PENTYLENETETRAZOLE)****14 - TRANSPORT INFORMATION**

IATA
Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.*
Hazard Class: 6.1
UN Number: 2811
Packing Group: III
IMO
Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.
Hazard Class: 6.1
UN Number: 2811
Packing Group: III
RID/ADR
Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.
Hazard Class: 6.1
UN Number: 2811
Packing group: III

15 - REGULATORY INFORMATION

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: T
Risk Phrases:
R 23/24/25 Toxic by inhalation, in contact with skin
and if swallowed.
Safety Phrases:
S 22 Do not breathe dust.
S 24/25 Avoid contact with skin and eyes.
S 28A After contact with skin, wash immediately with
plenty of water.
S 37 Wear suitable gloves.
S 45 In case of accident or if you feel unwell, seek
medical advice immediately (show the label where
possible).
WGK (Water Danger/Protection)
CAS# 54-95-5: No information available.
Canada
CAS# 54-95-5 is listed on Canada's NDSL List.
CAS# 54-95-5 is not listed on Canada's Ingredient Disclosure List.
US FEDERAL
TSCA
CAS# 54-95-5 is listed on the TSCA inventory.

16. Other Information

Product Use: Laboratory Reagent.

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

DISCLAIMER:

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

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