OTTO CHEMIE PVT LTD

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----------ISO 9001: 2015----------

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification
Piperazine anhydrous, 99%
Code P 1875

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
110-85-0	Piperazine, anhydrous	100	203-808-3

Section 3 - Hazards Identification
EMERGENCY OVERVIEW
Appearance: Not available. Flash Point: 82 deg C.
Danger! Corrosive. Causes severe eye and skin burns. May cause severe allergic respiratory reaction. May cause severe respiratory and digestive tract irritation with possible burns. Light sensitive. May cause dermatitis. Hygroscopic (absorbs moisture from the air).
Target Organs: None.

Potential Health Effects
Eye: Contact with eyes may cause severe irritation, and possible eye burns.
Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Contact with skin causes irritation and possible burns, especially if the skin is wet or moist.
Ingestion: May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns.
Inhalation: May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. May cause asthmatic attacks due to allergic sensitization of the respiratory tract. Causes chemical burns to the respiratory tract.
Chronic: Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration. Prolonged or repeated exposure may cause permanent eye damage. Repeated exposure may cause allergic respiratory reaction (asthma).

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Gently lift eyelids and flush continuous ly with water.
Skin: Get medical aid immediately. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
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.
Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.
Flash Point: 82 deg C (179.60 deg F)
Autoignition Temperature: 340 deg C (644.00 deg F)
Explosion Limits, Lower:4.00 vol %
Upper: 14.00 vol %
NFPA Rating: 3 - health, 2 - flammability, 0 - instability

Section 6 - Accidental Release Measures
General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Sweep up, then place into a suitable container for disposal.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get on skin or in eyes. Do not ingest or inhale.
Storage: Keep away from heat, sparks, and flame. Store in a cool, dry place. Corrosives area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Piperazine, anhydrous	none listed	none listed	none listed

OSHA Vacated PELs: Piperazine, anhydrous: No OSHA Vacated PELs are listed for this chemical.
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.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: Not available.
Odor: Ammonia-like odor.
pH: Not available.
Vapor Pressure: .8 mm Hg
Vapor Density: 3 (Air=1)
Evaporation Rate:Negligible.
Viscosity: Not available.
Boiling Point: 145.0 - 146.0 deg C @ 760.00mm Hg
Freezing/Melting Point:108.00 - 110.00 deg C
Decomposition Temperature:Not available.
Solubility: practically insoluble in ether
Specific Gravity/Density:Not available.
Molecular Formula:C4H10N2
Molecular Weight:86.14

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials.
Incompatibilities with Other Materials: Strong oxidizing agents; strong acids; acid chlorides; acid anhydrides; light; moisture; dicyanofurazan.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, nitrogen gas.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 110-85-0: TK7800000
LD50/LC50:
CAS# 110-85-0:
Draize test, rabbit, eye: 250 ug Severe;
Draize test, rabbit, eye: 250 ug/24H Severe;
Inhalation, mouse: LC50 = 5400 mg/m3/2H;
Oral, mouse: LD50 = 600 mg/kg;
Oral, rat: LD50 = 1900 mg/kg;
Skin, rabbit: LD50 = 4 mL/kg;
.

Carcinogenicity:
CAS# 110-85-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Piperazine can combine with nitrites or other nitrosating agents to form nitrosamines which have been found to cause cancer in laboratory animals. Piperazine alone was found to be noncarcinogenic. According to Patty's Industrial Hygiene and toxicology, Piperazine alone was found to be noncarcinogenic.

Teratogenicity: No data available.
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.
Other Studies:

Section 12 - Ecological Information

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:	PIPERAZINE		PIPERAZINE
Hazard Class:	8	8	
UN Number:	UN2579	UN2579	
Packing Group:	III	III	

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 110-85-0 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
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 # 110-85-0: immediate, 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# 110-85-0 can be found on the following state right to know lists: New Jersey, Pennsylvania, 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:
C
Risk Phrases:
R 34 Causes burns.

R 42/43 May cause sensitization by inhalation and skin contact.
R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:
S 22 Do not breathe dust.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face pr otection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)
CAS# 110-85-0: 2
Canada - DSL/NDSL
CAS# 110-85-0 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of E.
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# 110-85-0 is listed on the Canadian Ingredient Disclosure List.

Section 16: Other Information
This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.