



# Material Safety Data Sheet

Luminescence Technology Corp.

## Section 1. Chemical Identification

Chemical Name: Piperazine-1,4-dium chloride  
Product No: LT-S9219

## Section 2. Composition/Information on Ingredients

Formula:  $C_4H_{12}Cl_2N_2$   
CAS No.: 142-64-3  
Purity: > 99.5% , recrystallized 4 times

## Section 3. Hazards Identification



Exposure – might cause irritation to eyes, skin, mucous membranes, and upper respiratory system.

## Section 4. First Aid Procedures

**Eyes or skin** – Flush with a large amounts of water for at least 15 minutes.

**Inhalation** – Remove from exposure to fresh air immediately. If not breathing, give artificial respiration.

**Ingestion** – Wash out mouth with water. When provided person is conscious, call a physician.

## Section 5. Fire Fighting Procedures

This material is non-combustible. Use extinguishing media appropriately to the surrounding fire conditions.

Extinguishing Media:  $CO_2$ , water spray or dry chemical powder.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus when fighting a fire.

Unusual Fire and Explosion Hazards: Might emit toxic gases upon thermal decomposition.

## Section 6. Accidental Release Procedures

Wear respirator, protective glasses and rubber gloves. Sweep up material and place in a bag. Avoid generating dust. Material pick-up under ventilated area. Waste disposal method complies with state or local regulations.

## Section 7. Handling and Storage Methods

Store in sealed brown bottle in a dry location. Keep tightly closed. Keep away from oxidizers and dust.

## Section 8. Exposure Controls and Special Protection

Wear respirator, chemical-resistant gloves, safety glasses and appropriate protective clothing. Operation under mechanical hood is required. Avoid skin, eyes contact, and inhalation. Take out gloves and wash thoroughly after handling and take a safety shower and eye bath.

## Section 9. Physical and Chemical Properties

Appearance: White solid  
Melting point(DSC): -

## Section 10. Stability and Reactivity

Incompatibilities: Oxidizing Agents.  
Hazardous Decomposition Products: N/A  
Hazardous Polymerization: N/A

## Section 11. Toxicological Information

The toxicological properties have not been thoroughly investigated. The respiratory tract, skin, and eyes may be harmful by inhalation, ingestion, eyes or skin contact. Overexposure may cause irritation to eyes and skin.

## Section 12. Ecological Information

No data available.

## Section 13. Disposal Considerations

The material can be dissolved with a combustible solvent and the mixture can be burned in a chemical incinerator. The Waste Disposal Method: Comply with federal, state and local regulations.

## Section 14. Transport Information

This substance is considered to be non-hazardous for air transport.

## Section 15. Regulatory Information

IARC Cancer Review: Animal Inadequate Evidence, IMEMDT 32,411,1983

IARC Cancer Review: Human No Adequate Data, IMEMDT 32,411,1983

IARC Cancer Review: Group 3 IMSUDL 7,56,1987

NOHS 1974: HZD T1325;NIS1;TNF11;NOS1;TNE32.

NOES 1983: HZD T1325;NIS1;TNF3;NOS3;TNE253;FE34.

EPA Genetox Program 1988, Negative: Host-Mediated Assay, In Vivo SCE-Nonhuman.

EPA TSCA Section 8(B) Chemical Inventory.

EPA TSCA Section 8(D) Unpublished Health/Safety Studies.

## Section 16. Other Information

All information is used only as a guide. In case of contact with skin, eyes and respiratory tract resulting from handling procedure, Luminescence technology corp. shall not be in charge of any damage.

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