Tetrachloroethylene/Perchloroethylene MSDS

1. Product Name and Identification

Product Name: Tetrachloroethylene (Perchloroethylene)

Synonyms: PERC, Perchloroethylene, Ethylene Tetrachloride

CAS Number: 127-18-4

Relevant Identifiers: EINECS No. 204-825-9, UN No. 1897

2. Composition/Ingredients

Chemical Composition:

- **Tetrachloroethylene** (Main Ingredient): 100%

CAS Number: 127-18-4

3. Hazards Identification

Classification:

- **Physical Hazards**: Not classified as flammable but produces toxic fumes when heated.
- **Health Hazards**:
  - May cause central nervous system depression, dizziness, or nausea upon inhalation.
  - Can cause skin irritation or dermatitis on prolonged exposure.
  - Risk of serious irritation or damage to eyes.
- **Environmental Hazards**:
  - Toxic to aquatic life with long-lasting effects.

Signal Word: WARNING

Precautionary Statements:

- Avoid breathing vapor.
- Use only in a well-ventilated area.
- Prevent release into the environment.

4. First Aid Measures

- **Inhalation**: Remove the affected person to fresh air immediately. Seek medical attention if symptoms persist.
- **Skin Contact**: Wash with soap and water. Remove contaminated clothing. Consult a doctor if irritation occurs.
- **Eye Contact**: Flush eyes with water for at least 15 minutes. Seek medical assistance if irritation continues.
- **Ingestion**: Do NOT induce vomiting. Rinse mouth with water. Seek immediate medical attention.

5. Handling and Storage

Handling:

- Avoid direct contact with the substance.
- Use appropriate personal protective equipment (PPE).
- Avoid inhalation of vapors.

Storage:

- Store in tightly closed containers in a cool, well-ventilated area.
- Keep away from heat, direct sunlight, and incompatible materials.

6. Exposure Controls/Personal Protection

Exposure Limits:

- OSHA PEL: 100 ppm (TWA)
- ACGIH TLV: 25 ppm

Engineering Controls:

- Ensure adequate ventilation. Use local exhaust systems where possible.

Personal Protective Equipment (PPE):

- **Respiratory Protection**: Use air-purifying respirators with organic vapor cartridges.
- **Skin Protection**: Wear chemical-resistant gloves (e.g., nitrile).
- **Eye Protection**: Safety goggles or face shields.
- **Body Protection**: Protective clothing to minimize skin exposure.

7. Physical and Chemical Properties

- **Appearance**: Colorless liquid
- **Odor**: Sweet, ether-like smell
- **Boiling Point**: 121°C (249.8°F)

- **Melting Point**: -22°C (-7.6°F)
- **Solubility in Water**: Insoluble
- **Vapor Pressure**: 14 mmHg at 20°C
- **Density**: 1.622 g/cm^3 at 25°C
- **pH**: Neutral (not applicable)

8. Stability and Reactivity

Stability:

- Stable under normal conditions of use and storage.

Conditions to Avoid:

- Exposure to heat, sparks, or open flames.
- Prolonged contact with air or light can degrade the substance.

Hazardous Reactions:

- May react with strong oxidizers, causing the release of toxic gases like phosgene and hydrogen chloride.

9. Toxicological Information

- **Acute Toxicity**:
    - **Oral LD50** (rat): > 2,000 mg/kg
    - **Dermal LD50** (rabbit): > 3,200 mg/kg
    - **Inhalation LC50** (rat, 4 hours): Approx. 4,000 ppm
- **Chronic Exposure**:
    - Prolonged exposure may cause damage to the liver, kidneys, and central nervous system.
- **Irritation**:
    - Causes eye, respiratory, and skin irritation.

10. Disposal Considerations

Disposal Guidance:

- Dispose of contents and container in accordance with local, state, and federal regulations.
- Avoid release into waterways or sewage systems.
- Use licensed chemical waste disposal services to incinerate or treat waste.

Note: This MSDS is intended for informational purposes only. Always follow applicable regulations and guidelines specific to your location and application.