

## SAFETY DATA SHEET

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### Article 1 - Product Identification

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**Product Name:** TCEP, Hydrochloride**Catalog #** TC01-Q29A

*This product is sold only for research use by qualified laboratory personnel, and is not to be used as a drug, medical device, food additive, cosmetic, nor household chemical. It is not to be used in diagnostic, therapeutic, consumer, agricultural, nor pesticidal applications.*

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| Supplier of Datasheet:   | SignalChem Diagnostics Inc.                          |
| Street Address:          | 190-13160 Vanier Place                               |
| City, Prov. Postal Code: | Richmond, BC, V6V 2J2                                |
| Country:                 | Canada                                               |
| Phone Number:            | 1-888-606-3424 (Toll-free)<br>1-778-326-0223 (local) |

|                         |                                                                  |
|-------------------------|------------------------------------------------------------------|
| Emergency Phone Number: | In case of an emergency contact your local poison control center |
| Canada:                 | 1-844-764-7669                                                   |
| USA:                    | 1-800-222-1222                                                   |

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### Article 2 - Hazard Identification

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- **GHS classification:**  
Acute toxicity, Oral (Category 5)  
Acute toxicity, Dermal (Category 5)  
Skin corrosion/irritation (Category 1B)  
Serious eye damage/eye irritation (Category 1)



- **Hazard Pictograms:**
- **Signal words:** Danger.
- **Hazard statements:**  
H303 + H313 May be harmful if swallowed or in contact with skin.  
H314 Causes severe skin burns and eye damage.
- **Precautionary statements:**  
P260 Do not breathe dust.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- **Response:**  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P312 Call a POISON CENTER/ doctor if you feel unwell.  
P363 Wash contaminated clothing before reuse.
- **Storage:** P405 Store locked up.
- **Disposal:** P501 Dispose of contents/ container to an approved waste disposal plant.
- **Other hazards:** None known.

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### Article 3 – Composition/Information on Ingredients

Chemical Characterization: Substance.

| Common name | Chemical name                               | CAS-No.    | Concentration (w/v) |
|-------------|---------------------------------------------|------------|---------------------|
| TCEP        | Tris(2-carboxyethyl)phosphine hydrochloride | 51805-45-9 | ≤100%               |

### Article 4 – First-aid Measures

- **General information:** Consult a physician by providing the SDS.
- **After inhalation:** In case of irritation by inhaling this product, move the affected person to fresh air and await recovery. If irritation persists, seek immediate medical attention. If the casualty cannot breathe, give artificial respiration and seek immediate medical attention.
- **After skin contact:** Rinse with plenty of water for at least 15 minutes. Consult a physician if any reaction occurs.
- **After eye contact:** Rinse open eyes with plenty of water for at least 15 minutes. Consult a physician.
- **After swallowing:** Rinse the mouth with plenty of water, drink up to 2 glasses of water, and consult a physician.

### Article 5 – Fire-fighting Measures

- **Suitable extinguishing media:** Use water spray, carbon dioxide, extinguishing powder or foam.
- **Unsuitable extinguishing media:** No information available.
- **Specific hazards arising from the substance or mixture:** Combustible. Fire may cause evolution of oxides of phosphorus, carbon oxides, and hydrogen chloride gas. Development of hazardous combustion gases or vapours possible in the event of fire.
- **Special protective equipment and precautions for fire-fighters:** Self-contained breathing apparatus if necessary. Suppress gases/vapors/mist with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### Article 6 – Accidental Release Measures

- **Personal precautions, protective equipment, and emergency procedures:** Apply standard laboratory practices and personal protective equipment. Avoid breathing vapors, dust, mist, or gas. Ensure adequate ventilation.
- **Environmental precautions:** Do not allow to enter drains.
- **Methods and materials for containment and cleaning up:** Cover drains, absorb via sand or vermiculite and place in closed containers for disposal.

### Article 7 – Handling and Storage

- **Precautions for safe handling:** Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, and contact with eyes, skin, or clothing.
- **Conditions for safe storage:** Store according to product label instructions. Keep the container upright and tightly closed in a cool, dry well-ventilated place.
- **Storage class:** 8A, Combustible, corrosive hazardous materials.

### Article 8 – Exposure Controls/Personal Protection

- **Components with limit monitoring values at workplace:** N/A

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- **Appropriate engineering controls:**

Apply adequate ventilation including mechanical exhaust or laboratory fume hood. Follow standard laboratory practices.

- **Individual protection measures:**

**Respiratory protection:**

If ventilation is inadequate or when dust is generated, use respirators and components that are tested and certified in compliance with applicable government standards.

**Recommended filter type:** Filter type P2

**Hand protection:**

Wear gloves and use proper glove removal technique to avoid skin contact. Discard gloves after use by following the applicable laboratory regulations. Wash and dry hands.

**Eye/face protection:**

Safety goggles with side-shields tested and certified in compliance with applicable government standards.

**Skin/body protection:**

Use appropriate clothing, footwear and any additional protection measures to protect from splashes or contamination.

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### Article 9 – Physical and Chemical Properties

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|                                                       |                                                                 |
|-------------------------------------------------------|-----------------------------------------------------------------|
| <b>Physical state:</b> Solid.                         | <b>Color:</b> White.                                            |
| <b>Odour/Odour Threshold:</b> Not determined.         | <b>Particle characteristics:</b> Not determined.                |
| <b>Melting point/freezing point:</b> 175-177 °C.      | <b>pH:</b> Not applicable.                                      |
| <b>Boiling point/Boiling range:</b> Not determined.   | <b>Viscosity:</b> Not applicable.                               |
| <b>Flammability (solid, gaseous):</b> Not determined. | <b>Solubility:</b> Not determined.                              |
| <b>Explosion/Flammability limits:</b> Not applicable. | <b>Partition coefficient n-octanol/water:</b> Not determined.   |
| <b>Flash point:</b> Not determined.                   | <b>Vapor pressure at 20 °C:</b> Not determined.                 |
| <b>Auto-Ignition temperature:</b> Not applicable.     | <b>Density/relative density:</b> 1.041 g/cm <sup>3</sup> (25°C) |
| <b>Decomposition temperature:</b> Not determined.     | <b>Relative vapor density:</b> Not applicable.                  |

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### Article 10 – Stability and Reactivity

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- **Reactivity:** Stable under recommended transport and storage conditions.
- **Chemical stability:** Stable under recommended transport and storage conditions.
- **Possible hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Heat and moisture.
- **Incompatible materials:** Strong acids/bases, strong oxidizing/reducing agents.
- **Hazardous decomposition products:** Carbon oxides may be formed under fire conditions; no known decomposition information for other decomposition products.

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### Article 11 – Toxicological Information

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- **Acute toxicity:** 2,500.1 mg/kg acute toxicity oral estimate. Expert judgment based on (Q)SAR approach.
- **LD/LC50:** 3,000 mg/kg (dermal test on rat).
- **Skin corrosion/irritation:** Causes skin burns.
- **Serious eye damage/eye irritation:** Risk of serious damage to eyes.
- **Respiratory or skin sensitization:** Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
- **Germ cell mutagenicity:** Not available.
- **Carcinogenicity:** No components are listed in IARC, or NTP, or OSHA, or ACGIH.

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- **Reproductive toxicity:** Not available.
- **Teratogenicity:** Not available.
- **Specific target organ toxicity - single exposure/ - repeated exposure (GHS):** Not available.
- **Aspiration hazard:** Not available.
- **Potential routes of exposure:**
  - Inhalation:** Not available.
  - Ingestion:** Not available.
  - Skin:** Not available.
  - Eyes:** Not available.
- **Signs and Symptoms of Exposure:** Not available.
- **Synergistic effects:** Not available.

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### Article 12 - Ecological Information

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- **Eco-toxicity:** No data available.
- **Biodegradability:** No data available.
- **Bio-accumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **PBT and vPvB assessment:** No data available.
- **Other adverse effects:** No data available.

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### Article 13 - Disposal Considerations

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- **Disposal methods:** Dispose in accordance with applicable national, regional, or local laws and regulations. For additional handling information and protection of employees please refer to Article 7 and 8.
- **Contaminated packaging:** Dispose in accordance with applicable national, regional, or local laws and regulations. Use water or cleansing agents to clean the area.

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### Article 14 - Transport Information

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- **DOT:** Classified as dangerous goods.
- **IMDG:** Classified as dangerous goods.
- **IATA:** Classified as dangerous goods.
- **UN number:** 3261
- **UN proper shipping name:** Corrosive solid, acidic, organic, n.o.s.(Tris(2-carboxyethyl)phosphine hydrochloride).
- **Transport hazard class:** Class 8 - Corrosive substances
- **Packing group:** IATA-DGR: II. Cargo aircraft instruction: 863. Passenger aircraft instruction: 859.
- **Environmental hazards:** Not applicable.
- **Transport in bulk according to IMO instruments:** Not applicable.
- **Special precautions for user:** Not applicable.

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### Article 15 - Regulatory Information

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- **Canada Federal Regulations:** This product has been classified in accordance with the hazard criteria of the Hazardous products Regulations (HPR) and the SDS contains all the information required by the HPR.

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- **Local / National Regulations:** Downstream users need to comply with the conditions of safe use of the chemical, understand the environmental and health hazard and risk management measures identified on the SDS as well as the local/national regulations concerning the chemical.
- **Listed in Substances Inventories:**  
China, Taiwan Chemical Substance Inventory (TCSI)
- **Other Regulations:** Please pay attention to waste treatment, environmental and health hazards. It should also comply with local/national regulation requirements.

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### Article 16 - Other Information

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- **Version #:** 1.0
- **Issued date:** 2025-05-28

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. SignalChem shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalog for additional terms and conditions of sale.