

Section 1. Product and supplier information

1.1. Identification

Product name: TCEP Solution (1 M)

Product catalog number: P1021-10, P1021-100

CAS#: 51805-45-9

Formula: $C_9H_{15}O_6P \cdot HCl$

1.2. Recommended use and restrictions on use

Research use only. Not for clinical or human use.

1.3. Supplier

Ubiquitin-Proteasome Biotechnologies (UBPBio), LLC

17217 Waterview Pkwy

Dallas, TX 75252

USA

Tel: 1-800-218-0982

Fax: 1-800-682-6801

Email: info@ubpbio.com

Web: www.ubpbio.com

1.4. Emergency telephone number

Emergency number: 1-800-218-0982

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

Skin Corrosion, Category 1B

Serious Eye Damage, Category 1

2.2. GHS Label elements, including precautionary statements

Hazard pictograms



GHS Signal Word

DANGER

2.3. Hazard Statements

H314: Causes severe skin burns and eye damage

2.4. Precautionary Statements

Prevention

P260: Do not breathe dust/fume/gas/mist/vapors/spray

P264: Wash skin thoroughly after handling

P280: Wear protective gloves/protective clothing/eye protection/face protection

Response

P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P304+312: IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

P310: Call a POISON CENTER or doctor/physician if you feel unwell

P363: Wash contaminated clothing before reuse

Storage

P403 + P233: Store in a well-ventilated place. Keep container tightly closed

Disposal

P501: Dispose of contents/container to an approved waste disposal plant

2.5 NFPA rating

Health = 3

Fire = 0

Reactivity = 0

2.6 HMIS rating

Health = 3

Fire = 0

Reactivity = 0

2.7 Other Hazards

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

TCEP, also called Tris(2-carboxyethyl)phosphine hydrochloride

3.2. Product identifier

CAS#: 51805-45-9

EC#: 629-759-1

3.3. Mixtures

Not applicable

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SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation:	Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
First-aid measures after skin contact:	Wash skin with plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur.
First-aid measures after eye contact:	Hold eyelids apart and flush eyes with plenty of water. Have eyes examined and tested by medical professional.
First-aid measures after ingestion:	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get immediate medical attention.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, quick-acting ABC powder extinguisher, class A Foam.

Unsuitable extinguishing media: Not available.

5.2. Specific hazards arising from the chemical

Fire hazard: Not flammable.

Reactivity: The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire fighters

Protection during firefighting: Do not attempt to take action without suitable protective equipment.

Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Avoid breathing dust/fume/gas/mist/vapors/spray, and provide adequate ventilation.

As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

TCEP Solution (1 M)**6.3. Methods and material for containment and cleaning up**

Methods for cleaning up: Minimize generation of dust. Sweep spills into appropriate container for disposal. Notify authorities if product enters sewers or public waters. Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Precautions for safe handling: Ensure good ventilation. Wear personal protective equipment. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid prolonged exposure.

Hygiene measures: Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep container tightly closed. Store in a well-ventilated place. Keep at 4 - -20 °C for long-term storage.

Incompatible materials: Strong oxidizing agents. Moisture.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

TCEP, also called Tris(2 carboxyethyl)phosphine hydrochloride

Britain EH40: No data available

OSHA TWA: No data available

Europe: No data available

ACGIH TWA: No data available

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation.

Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection: Protective gloves

Eye protection: Safety glasses

Skin and body protection: Wear suitable protective clothing

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state: Solution

Color: clear or slightly brown

Odor: No data available

Odor threshold: No data available

pH: No data available

Melting point: 181 °C

Freezing point: No data available

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Boiling point: No data available
Flash point: No data available
Relative evaporation rate (butyl acetate=1): No data available
Flammability (solid, gas): Not applicable.
Vapor pressure: No data available
Relative vapor density at 20 °C: No data available
Relative density: No data available
Solubility: up to 287 g/l in water with adjusting pH to ~7.0 using NaOH
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosion limits: No data available
Explosive properties: No data available
Oxidizing properties: No data available

SECTION 10: Stability and reactivity**10.1. Reactivity**

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

No data available.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute Toxicity**

No data available.

Skin corrosion/irritation

Classification criteria are not met based on available data

Serious eye damage/irritation

Classification criteria are not met based on available data

Respiratory or skin sensitization

Classification criteria are not met based on available data

Germ cell mutagenicity

Classification criteria are not met based on available data

Carcinogenicity

Classification criteria are not met based on available data

Reproductive toxicity

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Classification criteria are not met based on available data

Specific target organ toxicity - single exposure

Classification criteria are not met based on available data

Specific target organ toxicity - repeated exposure

Classification criteria are not met based on available data

Aspiration hazard

Classification criteria are not met based on available data

Symptoms / Routes of exposure

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Ingestion: There may be irritation of the throat.

Skin: There may be mild irritation at the site of contact.

Eyes: There may be irritation and redness.

Delayed / Immediate Effects: No known symptoms.

Additional Information

Exposure may cause irritation of eyes, mucous membranes, upper respiratory tract and skin.

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated.

SECTION 12: Ecological information**12.1. Toxicity**

Ecology - general: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

No data available on mobility of the substance.

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

SECTION 13: Disposal considerations**13.1. Disposal methods**

Dispose substance in accordance with prevailing country, federal, state and local regulations.

SECTION 14: Transport information**14.1 US Department of Transportation (DOT)**

UN Number: 3261

Proper shipping name: Corrosive solid, acidic, organic, n.o.s. (Tris-(2carboxyethyl) phosphine HCL)

Class: 8 - CORROSIVE

Packing Group: II

14.2 International Maritime Dangerous Goods (IMDG)

TCEP Solution (1 M)

UN Number: 3261

Proper shipping name: Corrosive solid, acidic, organic, n.o.s. (Tris-(2carboxyethyl) phosphine HCL)

Proper shipping name: Class: 8 - CORROSIVE

Packing Group: II

14.3 International Air Transportation Association (IATA)

UN Number: 3261

Proper shipping name: Corrosive solid, acidic, organic, n.o.s. (Tris-(2carboxyethyl) phosphine HCL)

Class: 8 - CORROSIVE

Packing Group: II

SECTION 15: Regulatory information**SARA 302 components:**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 hazards:

No SARA Hazards.

Massachusetts Right to Know components:

Product name: TCEP CAS#: 51805-45-9

Pennsylvania Right to Know components:

Product name: TCEP CAS#: 51805-45-9

New Jersey Right to Know components:

Product name: TCEP CAS#: 51805-45-9

California Prop. 65 components:

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16. Other information**Other Information about this product**

Not available

DISCLAIMER:

This above information is believed to be correct and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty with respect to such information, and we assume no liability resulting from its use. Users should make independent decisions regarding the suitability of the information for their particular purposes.