

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/03/2015

Reviewed on 06/03/2015

1 Identification

- **Product identifier**
- **Trade name:** Reduction Reagent
- **Catalog or product number:** 195-4080
- **CAS Number:**
51805-45-9
- **Application of the substance / the mixture** *In-vitro laboratory reagent or component*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Bio-Rad Laboratories, Diagnostic Group
4000 Alfred Nobel Drive
Hercules, California 94547
- 1(510)724-7000
- **Information department:**
Technical services, customer support
TechsupportUSSD@bio-rad.com
- **Emergency telephone number:**
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

2 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description:**
51805-45-9 Tris (carboxyethyl) phosphine hydrochloride
- **Additional information:** For the wording of the listed risk phrases refer to section 15.

3 Hazard(s) identification

- **Classification of the substance or mixture**
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
Tris (carboxyethyl) phosphine hydrochloride
- **Hazard statements**
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**
P260 Do not breathe dusts or mists.

(Contd. on page 2)

DUS

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/03/2015

Reviewed on 06/03/2015

Trade name: Reduction Reagent

(Contd. of page 1)

P303+P361+P353 *IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

P310 *Immediately call a poison center/doctor.*

P321 *Specific treatment (see on this label).*

P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Classification system**

· **NFPA ratings (scale 0-4)**

Health = 1

Fire = 0

Reactivity = 0

4 First-aid measures

- **General information** *Immediately remove any clothing soiled by the product.*
- **After inhalation** *In case of unconsciousness place patient stably in side position for transportation.*
- **After skin contact** *Immediately wash with water and soap and rinse thoroughly.*
- **After eye contact** *Rinse opened eye for several minutes under running water. Then consult a doctor.*
- **After swallowing** *Drink copious amounts of water and provide fresh air. Immediately call a doctor.*

5 Fire-fighting measures

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** *No further relevant information available.*
- **Protective equipment:** *No special measures required.*

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
*Wear protective equipment (See section 8). Keep unprotected persons away.
Wear protective clothing.*
- **Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.*
- **Methods and material for containment and cleaning up:**
*Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.*
- **Reference to other sections**
*See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.*

7 Handling and storage

- **Handling**
- **Precautions for safe handling**
No special measures required.

(Contd. on page 3)

DUS

Safety Data Sheet
acc. to OSHA HCS

Printing date 06/03/2015

Reviewed on 06/03/2015

Trade name: Reduction Reagent

(Contd. of page 2)

- Thorough dedusting.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **Protection of hands:** Protective gloves.
- **Material of gloves** Synthetic gloves
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**
Safety glasses
Tightly sealed goggles.

9 Physical and chemical properties

- **General Information**
- **Appearance:**
 - Form:** Solid
 - Color:** White
- **Odor:** Odorless
- **Odour threshold:** Not determined.
- **pH-value:** Not applicable.
- **Change in condition**
 - Melting point/Melting range:** undetermined
 - Boiling point/Boiling range:** undetermined
- **Flash point:** Not applicable
- **Flammability (solid, gaseous)** Product is not flammable.
- **Ignition temperature:**
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Not determined.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 06/03/2015

Reviewed on 06/03/2015

Trade name: Reduction Reagent

(Contd. of page 3)

· **Danger of explosion:** *Product does not present an explosion hazard.*

· **Explosion limits:**
Lower: Not determined.
Upper: Not determined.

· **Vapor pressure:** *Not applicable.*

· **Density:** *Not determined*
· **Relative density** *Not determined.*
· **Vapour density** *Not applicable.*
· **Evaporation rate** *Not applicable.*

· **Solubility in / Miscibility with Water:** *Fully miscible*

· **Partition coefficient (n-octanol/water):** *Not determined.*

· **Viscosity:**
dynamic: Not applicable.
kinematic: Not applicable.
Organic solvents: *0.0 %*

Solids content: *100.0 %*
· **Other information** *No further relevant information available.*

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*
- **Incompatible materials:** *No further relevant information available.*
- **Hazardous decomposition products:** *No dangerous decomposition products known*

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values for hazardous components per OSHA criteria:**

51805-45-9 Tris (carboxyethyl) phosphine hydrochloride

Oral	LD50	3500 mg/kg (rat)
Dermal	LD50	>3000 mg/kg (rab)

· **Primary irritant effect:**

· **on the skin:**

Strong caustic effect on skin and mucous membranes.
Caustic effect on skin and mucous membranes.

· **on the eye:** *Strong caustic effect.*

· **Sensitization:** *No sensitizing effects known.*

· **Additional toxicological information:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 06/03/2015

Reviewed on 06/03/2015

Trade name: Reduction Reagent

(Contd. of page 4)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

· **Target organs:** Skin.

12 Ecological information

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation**

Hand over to hazardous waste disposers.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Dispose of waste in accordance to applicable national, regional, or local regulations.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**

· **DOT, IATA**

UN3261

· **ADR, ADN, IMDG**

Void

· **UN proper shipping name**

· **ADR, ADN, IMDG**

· **IATA**

Void

CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Tris (carboxyethyl) phosphine hydrochloride)

· **Transport hazard class(es)**

· **ADR, ADN, IMDG**

· **Class**

Void

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 06/03/2015

Reviewed on 06/03/2015

Trade name: Reduction Reagent

(Contd. of page 5)

· IATA	
· Class	8 Corrosive substances
· Packing group	
· DOT, IATA	II
· ADR, IMDG	Void
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	-

15 Regulatory information

· **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

Substance not listed.

· **Section 313 (40CFR372.65):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is not listed.

· **National regulations**

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· **Date of preparation / last revision** 06/03/2015 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

(Contd. on page 7)



Safety Data Sheet
acc. to OSHA HCS

Printing date 06/03/2015

Reviewed on 06/03/2015

Trade name: Reduction Reagent

(Contd. of page 6)

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

. * **Data compared to the previous version altered.**

DUS