1 Identification

- Product identifier
  - **Trade name:** 50X Tris/Acetic Acid/EDTA Buffer
  - **Catalog or product number:** 1610743, 1610773, 1660742, 1610773EDU, 1610743EDU, 1660742EDU
  - **Application of the substance / the mixture** Laboratory chemicals

- Details of the supplier of the safety data sheet
  - **Manufacturer/Supplier:** Bio-Rad Laboratories, Life Science Group
    2000 Alfred Nobel Drive
    Hercules, California 94547
    (510)741-1000

  - **Information department:** lsg_techserv_us@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.
  - 510-741-1000

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    - GHS07

- **Signal word** Warning

- **Hazard statements**
  - H319 Causes serious eye irritation.

- **Precautionary statements**
  - **P264** Wash thoroughly after handling.
  - **P280** Wear eye protection / face protection.
  - **P305+P351+P338** If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - **P337+P313** If eye irritation persists: Get medical advice/attention.

- **Other hazards**
- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with non-hazardous additions.
Trade name: 50X Tris/Acetic Acid/EDTA Buffer

- Listing of dangerous and non-hazardous components:

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Name</th>
<th>Hazard Classifications</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>77-86-1</td>
<td>Tris(hydroxymethyl)aminomethane</td>
<td>Eye Irrit. 2A, H319</td>
<td>20-35%</td>
</tr>
<tr>
<td>6381-92-6</td>
<td>Ethylenediaminetetraacetic acid disodium</td>
<td>Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335</td>
<td>1-2.5%</td>
</tr>
</tbody>
</table>

- Additional information: For the wording of the listed risk phrases refer to section 15.

4 First-aid measures

- Description of first aid measures
  - General information: No special measures required.
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Generally the product does not irritate the skin.
  - After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing: Rinse mouth with water. Seek medical attention and appropriate follow-up.
  - Information for doctor: Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters: Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Wear protective clothing.
- Environmental precautions:
  - Dilute with plenty of water.
  - Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- 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.
- Protective Action Criteria for Chemicals

- PAC-1:
  - Tris(hydroxymethyl)aminomethane: 18 mg/m³
  - Ethylenediaminetetraacetic acid disodium salt dihydrate: 30 mg/m³

- PAC-2:
  - 77-86-1 Tris(hydroxymethyl)aminomethane: 190 mg/m³
  - 6381-92-6 Ethylenediaminetetraacetic acid disodium salt dihydrate: 330 mg/m³

(Contd. on page 3)
**7 Handling and storage**

- **Handling**
  - **Precautions for safe handling**: No special precautions are necessary if used correctly.
  - **Information about protection against explosions and fires**: No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **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.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace**: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information**: The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **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.
  - Avoid contact with the eyes and skin.
- **Breathing equipment**: Not required.
- **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.
Trade name: 50X Tris/Acetic Acid/EDTA Buffer

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
- Appearance:
  - Form: Liquid
  - Color: Colorless
  - Odor: Odorless
  - Odor threshold: Not determined
- pH-value at 20 °C: 7.1
- Change in condition
  - Melting point/Melting range: undetermined
  - Boiling point/Boiling range: 100 °C
- Flash point: Not applicable
- Flammability (solid, gaseous) Not applicable.
- Decomposition temperature: Not determined
- Auto igniting: Product is not selfigniting.
- Danger of explosion: Product does not present an explosion hazard.
- Explosion limits:
  - Lower: Not determined
  - Upper: Not determined
- Vapor pressure at 20 °C: 23 hPa
- Density:
  - Not determined
  - Relative density: Not determined
  - Vapor density: Not determined
  - Evaporation rate: Not determined
- Solubility in / Miscibility with
  - Water: Fully miscible
- Partition coefficient (n-octanol/water): Not determined
- Viscosity:
  - dynamic: Not determined
  - kinematic: Not determined
- Solvent content:
  - Water: 60.3 %
- Solids content: 39.7 %
- Other information No further relevant information available

10 Stability and reactivity

- Reactivity No further relevant information available
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications
- Possibility of hazardous reactions No dangerous reactions known
Trade name: 50X Tris/Acetic Acid/EDTA Buffer

- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - LD/LC50 values for hazardous components per OSHA criteria:
      - 77-86-1 Tris(hydroxymethyl)aminomethane
        Oral LD50 5,900 mg/kg (rat)
      - 127-09-3 sodium acetate
        Oral LD50 3,530 mg/kg (rat)
    - Primary irritant effect:
      - on the skin: Irritant to skin and mucous membranes.
      - on the eye: Irritant effect.
    - Sensitization: No sensitizing effects known.
    - Additional toxicological information:
      The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version: Irritant

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    None of the ingredients is listed.
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.
  - Target organs: Eye

12 Ecological information

- Toxicity
  - 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.
    - Mobility in soil: 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.
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation**
    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.
  - **Recommended cleansing agent**: Water, if necessary with cleansing agents.

### 14 Transport information

- **UN-Number**
  - DOT, ADR, ADN, IMDG, IATA: Void

- **UN proper shipping name**
  - DOT, ADR, ADN, IMDG, IATA: Void

- **Transport hazard class(es)**
  - DOT, ADR, ADN, IMDG, IATA: Void

- **Class**
  - Void

- **Packing group**
  - DOT, ADR, IMDG, IATA: 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"**: Void

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**

  - **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**
    - **Section 302/304 (40CFR355.30 / 40CFR355.40):**
      None of the ingredients is listed.
    - **Section 313 (40CFR372.65):**
      None of the ingredients is listed.
    - **TSCA (Toxic Substances Control Act):**
      All ingredients are listed.

(Contd. on page 7)
Trade name: 50X Tris/Acetic Acid/EDTA Buffer

- TSCA new (21st Century Act)
  77-86-1 Tris(hydroxymethyl)aminomethane ACTIVE/EXEMPT

- California Proposition 65:
  None of the ingredients is listed.

- Chemicals known to cause cancer:
  The product does not contain listed components.

- Developmental Toxicity
  None of the ingredients is listed.

- Carcinogenic categories

- EPA (Environmental Protection Agency)
  None of the ingredients is listed.

- TLV (Threshold Limit Value established by ACGIH)
  None of the ingredients is listed.

- MAK (German Maximum Workplace Concentration)
  None of the ingredients is listed.

- NIOSH-Ca (National Institute for Occupational Safety and Health)
  None of the ingredients is listed.

- National regulations

- Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 05/15/2018 / -
- 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
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  NIOSH: National Institute for Occupational Safety
  OSHA: Occupational Safety & Health
**Trade name: 50X Tris/Acetic Acid/EDTA Buffer**

TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
Acute Tox. 4: Acute toxicity – Category 4  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  

* Data compared to the previous version altered.