

**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:**

2-[Tris- (hydroxymethyl)methylamino]-1-ethane sulfonic acid

**Synonyms:**

TES

TES Buffer

**CAS Number:**

7365-44-8

**EC number:**

230-906-3

**1.2 Relevant identified uses of the substance or mixture and uses advised against Industrial and professional uses only.**

Basic Intermediates, Laboratory chemicals, Synthesis of substances

Not for food or drug use, for laboratory use only.

**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

TAIWAN HOPAX CHEMS. MFG. CO., LTD

No. 28 Huadong Rd., Daliao Dist., Kaohsiung City 831134

TAIWAN-ROC

**Further information obtainable from:**

samantha@hopax.com.tw

**1.4 Emergency telephone number:**

Manufacturer:

HOPAX Fine Chemicals:

+886-7-7887600 Ext314 / +886-7-7872892

**SECTION 2. Hazards Identification****2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

**2.2 Label elements**

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

**Hazard pictograms**

Not classified

**Signal word**

Not signal word

**Hazard statements**

Not a hazardous substance

**Precautionary statements****Prevention**

Do not eat, drink or use tobacco when using this product.

Wear respiratory protection, protective gloves and eye/face protection.

Use only in a well-ventilated area.

Wash thoroughly after handling.

**Response**

No further relevant information available

**2.3 Other hazards**

PBT status:further information relevant for the PBT assessment is necessary

### SECTION 3. Composition / Information on ingredients

#### 3.1 Substances

**Chinese and English name :** N-三羥甲基-甲基-2氨基-乙磺酸 / 2-(tris-(hydroxymethyl) methylamino)-1-ethane sulfonic acid

**Formula :** C<sub>6</sub>H<sub>15</sub>NO<sub>6</sub>S

**Molecular weight :** 229.25 g/mol

**CAS-No. :** 7365-44-8

**EC-No. :** 230-906-3

### SECTION 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

##### General advice

Show this material safety data sheet to the doctor in attendance.

##### If inhaled

After inhalation: fresh air.

##### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing.

Rinse skin with water/ shower.

##### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Remove contact lenses.

##### If swallowed

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

### SECTION 5. FIRE FIGHTING MEASURES

#### 5.1 Extinguishing media

##### suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

##### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

#### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulfur oxides

Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2 Environmental precautions:**

Do not let product enter drains.

**6.3 Methods and material for containment and cleaning up:**

Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

See Section 13 for disposal information.

**SECTION 7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities****Storage conditions**

Store in original, properly-sealed container in ambient conditions for temperature and humidity.

Avoid exposure of material to direct sunlight. Isolate from any source of heat or ignition.

**Storage class**

Storage class (TRGS 510): 11: Combustible Solids

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION****8.1 Control parameters****Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

**8.2 Exposure controls****Appropriate engineering controls**

Change contaminated clothing. Wash hands after working with substance.

**Personal protective equipment:****Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

**Skin protection**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Viton®

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 30 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

**Body Protection**

protective clothing

**Respiratory protection**

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**

Do not let product enter drains.

**SECTION 9. PHYSICAL/CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

**General Information**

<b>Physical state</b>	Powder
<b>Colour</b>	White
<b>Odor</b>	No data available
<b>Odor Threshold</b>	No data available
<b>pH</b>	No data available
<b>Melting point/freezing point</b>	225 °C (437 °F)
<b>Boiling point or initial boiling point and boiling range</b>	No data available
<b>Flammability</b>	No data available
<b>Lower and upper explosion limit</b>	
<b>Lower:</b>	No data available
<b>Upper:</b>	No data available
<b>Flash point:</b>	No data available
<b>Auto-ignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Viscosity:</b>	
<b>Viscosity, Kinematic</b>	No data available
<b>Viscosity, dynamic:</b>	No data available
<b>Dynamic:</b>	No data available
<b>Solubility</b>	ca.229.3 g/l at 20 °C (68 °F)
<b>Partition coefficient n-octanol/water</b>	No data available
<b>Vapour pressure at 20 °C(68 °F):</b>	No data available

<b>Density</b>	No data available
<b>Relative density</b>	No data available
<b>Vapour pressure</b>	No data available
<b>Explosive properties</b>	No data available
<b>Oxidizing properties</b>	No data available

**9.2 Other information:**

No data available

**SECTION 10. STABILITY AND REACTIVITY****10.1 Reactivity:**

No data available

**10.2 Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature)

**10.3 Possibility of hazardous reactions:**

No data available

**10.4 Conditions to avoid:**

No data available.

**10.5 Incompatible materials:**

Strong oxidizing agents

**10.6 Hazardous decomposition products:**

In the event of fire: see section 5

**SECTION 11. TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects****Acute toxicity:**

No data available

Dermal: No data available

No data available

**Skin corrosion/irritation**

No data available

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity****IARC:**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**NTP:**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**OSHA:**

No component of this product present at levels greater than or equal to 0.1% is

on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

RTECS: Not available

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

**SECTION 12. ECOLOGICAL INFORMATION****12.1 Toxicity**

No data available

**12.2 Persistence and degradability:****Biodegradability**

No data available

**12.3 Bioaccumulative potential:**

No data available

**12.4 Mobility in soil:**

No data available

**12.5 Results of PBT and vPvB assessment**

**PBT:** No data available

**vPvB:** No data available

**12.6 Endocrine disrupting properties**

No data available

**12.7 Other adverse effects:**

No data available.

**SECTION 13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Product**

The chemical must be disposed or recycled in accordance with Waste Disposal Act. See [www.epa.gov.tw](http://www.epa.gov.tw) for the information of chemical waste disposal companies and their contacts. Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

**SECTION 14. TRANSPORT INFORMATION****International Regulations****IATA-DGR**

Not regulated as a dangerous good

UN/ID No. : Not applicable

Proper shipping name : Not applicable  
Class : Not applicable  
Subsidiary risk : Not applicable  
Packing group : Not applicable  
Labels : Not applicable  
Packing instruction (cargo aircraft): Not applicable  
Packing instruction (passenger aircraft): Not applicable

**IMDG-Code**

Not regulated as a dangerous good  
UN number : Not applicable  
Proper shipping name : Not applicable  
Class : Not applicable  
Subsidiary risk : Not applicable  
Packing group : Not applicable  
Labels : Not applicable

EmS Code : Not applicable

Marine pollutant : no

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Special precautions for user**

Remarks : Not classified as dangerous in the meaning of transport regulations.

**SECTION 15. REGULATORY INFORMATION****15.1 Safety, health and environmental regulations specific for the product in question:****Inventory of Existing Chemical Substances in China (IECSC)**

Substance is listed.

**Chemical Substance Inventory in Taiwan, China (TCSI)**

Substance is listed.

**Japan Existing and New Chemical Substances Inventory (ENCS)**

Substance is not listed.

**Korea Existing Chemicals List (KECL)**

Substance is not listed.

**Korea Priority Existing Chemicals List (PEC)**

Substance is not listed.

**TSCA Chemical Substance Inventory**

Substance is listed.

**EU EINECS/ELINCS/NLP**

Substance is listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Substance is listed.

**Philippine Inventory of Chemicals and Chemical Substances (PICCS)**

Substance is not listed.

**Australian Inventory of Industrial Chemicals (AIIC)**

Substance is listed.

**Canada Domestic Substances List (DSL)**

Substance is listed.

**Canada Non-domestic Substances List (NDSL)**

Substance is not listed.

**Thailand Existing Chemicals Inventory (TECI)**

Substance is not listed.

**15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

**SECTION 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.

**Abbreviations and acronyms:**

NOAEL: Non Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

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

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

**According to Regulation 1907/2006 (EC), Article 31**

<b>Date that the SDS was prepared:</b>	2026/01/18
<b>Version:</b>	3.1

**Disclaimer**

This SDS was prepared sincerely on the basis of the information we could obtain. However, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information, but also the laws and regulations of the organization, area and country where the product is to be used, which shall be given the first priority.

The product is supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added hereafter. If the product is to be used beyond the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The product must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set upon each user's own responsibility.

**End of Safety Data Sheet**