

### SECTION 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

**Trade name: Tris- (Hydroxymethyl)-aminomethane**

**Synonyms:**

2-amino-2-(hydroxymethyl)propane-1,3-diol  
 1,3-Propanediol, 2-amino-2-(hydroxymethyl )  
 TRIS  
 Trometamol  
 Trometamol (USP, EP, BP, ChP, JPC)  
 Tromethamine  
 TRIS-MBG (Ph.EUR, USP, JP)  
 TRIS USP/EP  
 TRIS-UP  
 TRIS-Ultra Pure  
 TRIS base  
 TRIS buffer  
 TRIS-TECH  
 T-300  
 TRIS-MBG  
 TRIS ACS  
 TRIS-BSP  
 TRIS research grade  
 TRIS ACS GRADE  
 TRIZMA BASE  
 TA-100  
 Tris Base USP  
 Tris-MBG-JPC  
 TRIS JP  
 Tromethamine (Trometamol) EP

**INCI:**

TROMETHAMINE

**CAS Number:**

77-86-1

**EC number:**

201-064-4

**Registration number 01-2119957659-16-XXXX**

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Formulation & (re)packing of substances and mixtures  
 Use in coatings (industrial)  
 Use as an intermediate (industrial)  
 Use as a reactive processing agent  
 Use in laboratories (industrial)  
 Use in coatings (professional)  
 Use in laboratories (professional)  
 Use in coatings (consumers)  
 End use in cosmetic products (consumers)

#### 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

**Only Representative**

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**1.4 Emergency telephone number:**

+886-7-7887600 / +886-7-7872892 Ext 314

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

**Classification according to Regulation (EC) No 1272/2008 & 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)**

The substance is not classified, according to the CLP regulation.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008 & 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Not applicable

**Hazard pictograms**

Not applicable

**Signal word**

Not applicable

**Hazard statements**

Not applicable

**2.3 Other hazards****Results of PBT and vPvB assessment****PBT:**

Not applicable.

**vPvB:**

Not applicable

**SECTION 3. Composition / Information on ingredients****3.1 Chemical characterisation: Substances****CAS No.**

77-86-1

**Identification number(s)**

**EC number:** 201-064-4

**SECTION 4. FIRST AID MEASURES****4.1 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:**

Wash off with plenty of water.

**After eye contact:**

Wash immediately and abundantly with running water for at least 15 minutes, keeping eyes open

May cause injury due to mechanical action

**After swallowing:**

Do not induce vomiting.

If the person is conscious, give small quantities of water to drink.

If symptoms persist consult doctor.

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

No further relevant information available.

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

Treatment should be symptomatic and directed to relieving any effects.

**SECTION 5. FIRE FIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing agents:**

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

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

Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

Combustible.

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

**5.3 Advice for firefighters****Protective equipment:**

Wear self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Wear fully protective suit.

**Additional information**

Remove persons from danger area

Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

Cool fire exposed containers with water spray from a protected location

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

Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

**6.2 Environmental precautions:**

Do not allow to enter sewers/ surface or ground water.

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

Dispose of the material collected according to regulations.

Sweep up, place in a bag and hold for waste disposal.

Ventilate area and wash spill site after material pickup is complete.

**6.4 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.

## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid inhalation of vapour or mist.  
Wash thoroughly after handling.

#### Information about fire - and explosion protection:

No special measures required.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage:

#### Requirements to be met by storerooms and receptacles:

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.  
Do not store in: Zinc. Galvanized containers. Aluminum. Copper. Copper alloys.

### 7.3 Specific end use(s)

No further relevant information available

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Additional information about design of technical facilities: No further data; see item 7.**

### 8.1 Control parameters

#### Ingredients with limit values that require monitoring at the workplace:

Not required.

#### DNELs

#### CAS: 77-86-1 trometamol

Oral	DNEL systemic effects, long-term	8.3 mg/kg bw/day (population)
Dermal	DNEL systemic effects, long-term	83.3 mg/kg bw/day (population)
		166.7 mg/kg bw/day (Workers)
Inhalative	DNEL systemic effects, long-term	29 mg/m <sup>3</sup> (population)
		117.5 mg/m <sup>3</sup> (Workers)

#### PNECs

#### CAS: 77-86-1 trometamol

PNEC STP 300 mg/L (general)

**Additional information: The lists valid during the making were used as basis.**

### 8.2 Exposure controls

#### Personal protective equipment:

#### General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

#### Respiratory protection:

For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn.  
For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

#### Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Chemical resistant gloves (EN374)

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

#### Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

### 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:

Tightly sealed goggles

## SECTION 9. PHYSICAL/CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

#### General Information

Appearance:	
Form:	Crystalline powder
Colour:	White
Odour:	Odourless
Odour threshold:	No data available.
pH-value:	No data available
Change in condition	
Melting point/freezing point:	171-172 °C
Initial boiling point and boiling range:	288±0.5 °C (DSC)
Flash point:	No data available
Flammability (solid, gas):	No data available
Decomposition temperature:	No data available
Auto-ignition temperature:	No data available
Explosive properties:	Based on chemical structure the substance is not explosive.
Explosion limits:	Non explosion
Lower:	No data available
Upper:	No data available
Vapour pressure at 20 °C:	0.000267 Pa
Density:	No data available
Relative density at 20 °C	1.32 g/L
Vapour density	No data available
Evaporation rate	No data available
Solubility in / Miscibility with:	
water at 20 °C:	684 g/L
Partition coefficient: n-octanol/water	No data available
Viscosity:	
Dynamic:	No data available
Kinematic:	No data available

### 9.2 Other information

No further relevant information available.

## SECTION 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No further relevant information available.

### 10.2 Chemical stability

#### Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

### 10.3 Possibility of hazardous reactions

No dangerous reactions known

**10.4 Conditions to avoid**

No further relevant information available.

**10.5 Incompatible materials:**

No further relevant information available.

**10.6 Hazardous decomposition products:**

No dangerous decomposition products known

**SECTION 11. TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

**Acute toxicity**

LD50 Oral - Rat - female - > 5,000 mg/kg

(OECD Test Guideline 425)

Inhalation: No data available

LD50 Dermal - Rat - male and female - > 5,000 mg/kg

(OECD Test Guideline 402)

**Primary irritant effect:**

**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 4 h

**Serious eye damage/irritation**

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

**Respiratory or skin sensitisation**

Based on available data, the classification criteria are not met.

**Subacute to chronic toxicity:**

The available data on the repeated dose toxicity of the test substance do not meet the criteria for classification according to Regulation (EC) 1272/2008 or Directive 67/548/EEC, and are therefore conclusive but not sufficient for classification.

**Repeated dose toxicity**

**CAS: 77-86-1 trometamol**

Oral NOAEL Rep. Dose  $\geq 1,000$  mg/kg bw/d (rat) (OECD 421, 29 days. Ellis-Hutchings, 2012)

**Germ cell mutagenicity**

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster lung cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

**Carcinogenicity**

Based on available data, the classification criteria are not met.

Based on all available data of trometamol, there is no evidence of a carcinogenic potential. Further testing is not required under Regulation (EC) 1907/2006, Annex XI, section 1.2.

**Reproductive toxicity**

Based on available data, the classification criteria are not met.

The available data on the reproduction, fertility and teratogenic toxicity, and on effects on or via lactation of the

test substance do not meet the criteria for classification according to Regulation (EC) 1272/2008 or Directive 67/548/EEC, and are therefore conclusive but not sufficient for classification.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Reproductive toxicity**

**CAS: 77-86-1 trometamol**

Oral	NOAEL (Developmental)	≥1,000 mg/kg bw day (rat) (Ishida, 2004, Teratogenicity (F1))
	NOAEL (Fertility)	1,000 mg/kg bw day (rat) (OECD 421 (Reproductive toxicity))

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

**Aquatic toxicity:**

Does not meet the criteria for classification

**CAS: 77-86-1 trometamol**

LC50/EC50 3	97 mg/L (Freshwater algae)
LC50/EC50	980 mg/kg soil dw (Freshwater invertebrates) (OECD 202 Daphnia sp acute immobilisation test)
EC50	>1,000 mg/L (aquatic micro-organisms) (OECD 209 (Activated Sludge) Schaefer 2012)
NOEC/72h	100 mg/L (Freshwater algae)
NOEC	>4 mg/L (Fish)

### 12.2 Persistence and degradability

The ready biodegradability of TRIS AMINO was demonstrated in the OECD ready biodegradation test. Therefore, TRIS

AMINO does not meet the Persistent (P) or very Persistent (vP) criteria.

- Bioaccumulation Assessment

Since the log Kow value of TRIS AMINO (-2.31) is below 4.5 the substance is not expected to be bioaccumulative, based on the screening criteria for bioaccumulation, stipulated in the ECHA's Guidance on information requirements and chemical safety assessment - Part C: PBT Assessment (2008).

- Environmental Toxicity:

According to Annex XIII of REACH Regulation (EC) No 1907/2006, a substance is considered to be toxic in terms of PBT criteria if EC50 values for aquatic organisms are lower than 0.1 mg/L. Effect values are greater than 300 mg/L thus Tris Amino is not considered as toxic regarding ecotoxicological

### 12.3 Bioaccumulative potential

Not expected to bioaccumulate due to the low log Kow < 4.5

log Kow: -2.31

### 12.4 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.

**12.5 Results of PBT and vPvB assessment****PBT:**

Not applicable.

**vPvB:**

Not applicable.

**12.6 Other adverse effects**

No further relevant information available.

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

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Uncleaned packaging:****Recommendation:**

Disposal must be made according to official regulations.

**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/legislation specific for the substance or mixture**

**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 listed.

**Korea Existing Chemicals List (KECL)**

Substance is 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 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 listed.

**Labelling according to Regulation (EC) No 1272/2008 & 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Not applicable

**Hazard pictograms**

Not applicable

**Signal word**

Not applicable

**Hazard statements**

Not applicable

**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>	7.1

**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**