

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/04/2014

Reviewed on 04/04/2014

1 Identification

- **Product identifier**
- **Trade name:** TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE
- **Article number:** 11700, 11720
- **CAS Number:**
77-86-1
- **EC number:**
201-064-4
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
 Acute Tox. 4 H312 Harmful in contact with skin.
 Acute Tox. 4 H332 Harmful if inhaled.

 Eye Irrit. 2B H320 Causes eye irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Harmful

Harmful by inhalation, in contact with skin and if swallowed.



Irritant

Irritating to eyes.

- **Information concerning particular hazards for human and environment:** Not applicable.

- **Label elements**

- **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/04/2014

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Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 1)

· **Code letter and hazard designation of product:**



Harmful

· **Risk phrases:**

Harmful by inhalation, in contact with skin and if swallowed.
Irritating to eyes.

· **Safety phrases:**

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
This material and its container must be disposed of as hazardous waste.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 2
Fire = 0
Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

77-86-1 trometamol

· **Identification number(s)**

· **EC number:** 201-064-4

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.

· **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.

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/04/2014

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Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 2)

- **After swallowing:** Immediately call a doctor.
- **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**
- **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.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** 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).
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**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **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:** No special requirements.
- **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:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/04/2014

Reviewed on 04/04/2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 3)

- **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:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- **Protection of hands:**



Protective gloves

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

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

9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form: Powder

Color: White

- **Odor:** Odorless

- **Odour threshold:** Not determined.

- **pH-value at 20 °C (68 °F):** 11.5

- **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 220 °C (428 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not flammable.

(Contd. on page 5)

USA

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Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 4)

· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Auto igniting:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapor pressure:	Not determined.
· Density at 20 °C (68 °F):	0.84159 g/cm ³ (7.023 lbs/gal)
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water): Not determined.	
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.
· Organic solvents:	0.0 %
· Water:	1.0 %
· VOC content:	1.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **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 that are relevant for classification:**

77-86-1 trometamol

Oral	LD50	5900 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

(Contd. on page 6)

-USA

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Reviewed on 04/04/2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 5)

· **Additional toxicological information:**

· **Carcinogenic categories**

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

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

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 (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.

Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

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

· **Uncleaned packagings:**

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

14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA** Void

· **UN proper shipping name**

· **DOT, ADR, IMDG, IATA** Void

· **Transport hazard class(es)**

· **DOT, ADR, IMDG, IATA**

· **Class** Void

· **Packing group**

· **DOT, ADR, IMDG, IATA** Void

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

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(Contd. of page 6)

- | | |
|--|-----------------|
| · 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

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

· Section 355 (extremely hazardous substances):

Substance is not listed.

· Section 313 (Specific toxic chemical listings):

Substance is not listed.

· TSCA (Toxic Substances Control Act):

Substance is listed.

· Proposition 65

· Chemicals known to cause cancer:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

· Chemicals known to cause developmental toxicity:

Substance is not listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

Substance is not listed.

· TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

· Product related hazard informations:

The product has been classified and marked in accordance with directives on hazardous materials.

· Hazard symbols:



Harmful

(Contd. on page 8)

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(Contd. of page 7)

· Risk phrases:

Harmful by inhalation, in contact with skin and if swallowed.
Irritating to eyes.

· Safety phrases:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
This material and its container must be disposed of as hazardous waste.

· **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.

· **Date of preparation / last revision** 04/04/2014 / -

· 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)

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B

USA

Safety data sheet
according to 1907/2006/EC, Article 31




Printing date 04.04.2014

Revision: 04.04.2014

1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE
- **Article number:** 11700, 11720
- **CAS Number:**
77-86-1
- **EC number:**
201-064-4
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- ProSciTech Pty Ltd
11 Carlton Street, Kirwan QLD 4817 Australia
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
-  **Harmful**
Harmful by inhalation, in contact with skin and if swallowed.
-  **Irritant**
Irritating to eyes.
- **Information concerning particular hazards for human and environment:** Not applicable.
- **Label elements**
- **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.
- **Code letter and hazard designation of product:**
-  **Harmful**
- **Risk phrases:**
Harmful by inhalation, in contact with skin and if swallowed.

(Contd. on page 2)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 04.04.2014

Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 1)

Irritating to eyes.

· **Information concerning particular hazards for human and environment:**

· **Safety phrases:**

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

77-86-1 trometamol

· **Identification number(s)**

· **EC number:** 201-064-4

4 First aid measures

· **Description of first aid measures**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· **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:** *Call for a doctor immediately.*

· **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 Firefighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

CO₂, 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.*

· **Advice for firefighters**

· **Protective equipment:** *Mouth respiratory protective device.*

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** *Not required.*

· **Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.*

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 04.04.2014

Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 2)

- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
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**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making 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.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

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

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 04.04.2014

Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 3)

· **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

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Powder

Colour: White

· **Odour:** Odourless

· **Odour threshold:** Not determined.

· **pH-value at 20 °C:** 11.5

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 220 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Self-igniting:** Not determined.

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

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapour pressure:** Not determined.

· **Density at 20 °C:** 0.84159 g/cm³

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with water:**

Not miscible or difficult to mix.

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

· **Viscosity:**

Dynamic: Not determined.

(Contd. on page 5)

-AU

Safety data sheet
according to 1907/2006/EC, Article 31

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Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 4)

Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	0.0 %
Water:	1.0 %
VOC (EC)	0.00 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **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 relevant for classification:		
77-86-1 trometamol		
Oral	LD50	5900 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour 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.
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

(Contd. on page 6)

AU

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(Contd. of page 5)

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	
· ADG, ADN, IMDG, IATA	Void
· UN proper shipping name	
· ADG, ADN, IMDG, IATA	Void
· Transport hazard class(es)	
· ADG, ADN, IMDG, IATA	
· Class	Void
· Packing group	
· ADG, 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.

15 Regulatory information

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

· Australian Inventory of Chemical Substances	
Substance is listed.	
· Standard for the Uniform Scheduling of Medicines and Poisons	
77-86-I	trometamol
	S4

· **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· **Code letter and hazard designation of product:**



Harmful

(Contd. on page 7)

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(Contd. of page 6)

· **Risk phrases:**

*Harmful by inhalation, in contact with skin and if swallowed.
Irritating to eyes.*

· **Safety phrases:**

*In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
This material and its container must be disposed of as hazardous waste.*

· **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.

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1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE
- **Article number:** 11700, 11720
- **CAS Number:**
77-86-1
- **EC number:**
201-064-4
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazards identification

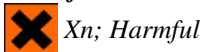
- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS07

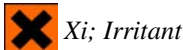
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xn; Harmful

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.



Xi; Irritant

R36: Irritating to eyes.

- **Information concerning particular hazards for human and environment:** Not applicable.

- **Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

(Contd. on page 2)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 04.04.2014

Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 1)

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard statements**

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

· **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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

P322 Specific measures (see on this label).

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P420 Store away from oxidizing agents.

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

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

77-86-1 trometamol

· **Identification number(s)**

· **EC number:** 201-064-4

4 First aid measures

· **Description of first aid measures**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.

· **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:** Call for a doctor immediately.

· **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.

GB

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 04.04.2014

Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 2)

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, 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.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** 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).
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**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making 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.

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 04.04.2014

Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 3)

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

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

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

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

· Form:	Powder
· Colour:	White
· Odour:	Odourless
· Odour threshold:	Not determined.

· **pH-value at 20 °C:** 11.5

· **Change in condition**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	220 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:**

· **Decomposition temperature:** Not determined.

· **Self-igniting:** Not determined.

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

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 04.04.2014

Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 4)

· Vapour pressure:	Not determined.
· Density at 20 °C:	0.84159 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	0.0 %
Water:	1.0 %
VOC (EC)	0.00 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **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 relevant for classification: | | |
| 77-86-1 trometamol | | |
| Oral | LD50 | 5900 mg/kg (rat) |
- **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** Irritating effect.
 - **Sensitization:** No sensitizing effects known.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 04.04.2014

Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 5)

- **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.
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	Void
· ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	Void
· ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	Void
· 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":	-

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

GB

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 04.04.2014

Revision: 04.04.2014

Trade name: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Contd. of page 6)

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:**

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 Harmonized 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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

GB

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 04.04.2014

Herziening van: 04.04.2014

1 Identificatie van de stof of het mengsel en van de vennootschap/onderneming

- **Productidentificatie**
- **Handelsnaam:** TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE
- **Artikelnummer:** 11700, 11720
- **CAS-nummer:**
77-86-1
- **EC-nummer:**
201-064-4
- **Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**
Geen verdere relevante informatie verkrijgbaar.
- **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën
- **Details betreffende de verstrekker van het veiligheidsinformatieblad**
- **Fabrikant/leverancier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
-
- Aurion
Binnenhaven 5
6709 PD Wageningen
The Netherlands
Tel: 31 317 415094
Fax: 31 317 415955
email: info@aurion.nl
- **Inlichtingengevende sector:** Product safety department
- **Telefoonnummer voor noodgevallen:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Identificatie van de gevaren

- **Indeling van de stof of het mengsel**
- **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



GHS07

Acute Tox. 4 H302 Schadelijk bij inslikken.
Acute Tox. 4 H312 Schadelijk bij contact met de huid.
Acute Tox. 4 H332 Schadelijk bij inademing.

- **Indeling overeenkomstig Richtlijn 67/548/EEG of Richtlijn 1999/45/EG**

Xn; Schadelijk

R20/21/22: Schadelijk bij inademing, opname door de mond en aanraking met de huid.

Xi; Irriterend

R36: Irriterend voor de ogen.

- **Speciale gevaarsomschrijving voor mens en milieu:** Vervalt.

(Vervolg op blz. 2)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 04.04.2014

Herziening van: 04.04.2014

Handelsnaam: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Vervolg van blz. 1)

- **Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



GHS07

- **Signaalwoord** Waarschuwing
- **Gevarenaanduidingen**
H302+H312+H332 Schadelijk bij inslikken, bij contact met de huid en bij inademing.
- **Voorzorgsmaatregelen**
 - P261 Inademing van stof/rook/gas/nevel/damp/spuitnevel vermijden.
 - P280 Beschermende handschoenen/beschermende kleding/oogbescherming/gelaatsbescherming dragen.
 - P322 Specifieke maatregelen (zie op dit etiket).
 - P304+P340 NA INADEMING: het slachtoffer in de frisse lucht brengen en laten rusten in een houding die het ademen vergemakkelijkt.
 - P420 Gescheiden van oxydatiemiddelen bewaren.
 - P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.
- **Andere gevaren**
- **Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

3 Samenstelling en informatie over de bestanddelen

- **Chemische karakterisering: Stoffen**
- **CAS-Nr. omschrijving**
77-86-1 trometamol
- **Identificatienummer(s)**
- **EC-nummer:** 201-064-4

4 Eerstehulpmaatregelen

- **Beschrijving van de eerstehulpmaatregelen**
- **Algemene informatie:**
Het is mogelijk dat vergiftigingssymptomen pas na vele uren optreden. Om deze reden is medische controle gedurende minstens 48 uur na een ongeval noodzakelijk.
- **Na het inademen:**
Frisse lucht toedienen, eventueel beademing, warmte. Wanneer de klachten niet ophouden, een arts raadplegen.
Bij bewusteloosheid ligging en vervoer in stabiele zijligging.
- **Na huidcontact:** Over het algemeen is het produkt niet prikkelend voor de huid
- **Na oogcontact:**
De ogen gedurende verscheidene minuten onder stromend water afspoelen terwijl de oogspleet geopend blijft. Bij aanhoudende klachten een dokter raadplegen.
- **Na inslikken:** Onmiddellijk arts raadplegen.
- **Informatie voor de arts:**
- **Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.

(Vervolg op blz. 3)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 04.04.2014

Herziening van: 04.04.2014

Handelsnaam: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Vervolg van blz. 2)

- **Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**
- *Geen verdere relevante informatie verkrijgbaar.*

5 Brandbestrijdingsmaatregelen

- **Blusmiddelen**
- **Geschikte blusmiddelen:**
CO₂, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.
- **Speciale gevaren die door de stof of het mengsel worden veroorzaakt**
Geen verdere relevante informatie verkrijgbaar.
- **Advies voor brandweerlieden**
- **Speciale beschermende kleding:** *Ademhalingstoestel aantrekken.*

6 Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures** *Niet nodig.*
- **Milieuvoorzorgsmaatregelen:** *Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.*
- **Insluitings- en reinigingsmethoden en -materiaal:**
*Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.
Besmet materiaal zoals afval volgens punt 13 verwijderen.
Voor voldoende ventilatie zorgen.*
- **Verwijzing naar andere rubrieken**
*Informatie inzake veilig gebruik - zie hoofdstuk 7.
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.
Informatie inzake berging - zie hoofdstuk 13.*

7 Hantering en opslag

- **Handling:**
- **Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**
*Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.
Aërosolvorming vermijden.*
- **Informatie m.b.t. brand- en ontploffingsgevaar:** *Geen bijzondere maatregelen noodzakelijk.*
- **Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** *Geen bijzondere eisen.*
- **Informatie m.b.t. gezamenlijke opslag:** *Niet noodzakelijk.*
- **Verdere inlichtingen over eisen m.b.t. de opslag:** *Tanks ondoordringbaar gesloten houden.*
- **Specifiek eindgebruik** *Geen verdere relevante informatie verkrijgbaar.*

8 Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** *Geen aanvullende gegevens. Zie 7.*
- **Controleparameters**
- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:** *Vervalt.*
- **Aanvullende gegevens:** *Als basis dienden lijsten die bij opstelling geldig waren.*

(Vervolg op blz. 4)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 04.04.2014

Herziening van: 04.04.2014

Handelsnaam: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Vervolg van blz. 3)

- **Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**
Verwijderd houden van eet- en drinkwaren.
Verontreinigde kleding onmiddellijk uittrekken.
Vóór de pauze en aan het einde van werktijd handen wassen.
Aanraking met de ogen vermijden.
Aanraking met de ogen en de huid vermijden.
- **Ademhalingsbescherming:**
Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingstoestel gebruiken.
- **Handbescherming:**



Veiligheidshandschoenen

Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.

Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

- **Handschoenmateriaal**
De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.
- **Doordringingstijd van het handschoenmateriaal**
De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.
- **Oogbescherming:**



Nauw aansluitende veiligheidsbril

9 Fysische en chemische eigenschappen

- **Informatie over fysische en chemische basiseigenschappen**

- **Algemene gegevens**

- **Voorkomen:**

Vorm:	Poeder
Kleur:	Wit
Reuk:	Reukloos
Geurdrempelwaarde:	Niet bepaald.

- **pH-waarde bij 20 °C:** 11,5

- **Toestandsverandering**

Smeltpunt/smeltbereik:	Niet bepaald.
Kookpunt/kookpuntbereik:	220 °C

- **Vlampunt:** Niet bruikbaar.

- **Ontvlambaarheid (vast, gasvormig):** Niet bruikbaar.

(Vervolg op blz. 5)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 04.04.2014

Herziening van: 04.04.2014

Handelsnaam: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Vervolg van blz. 4)

· Ontstekingstemperatuur:	
Ontbindingstemperatuur:	Niet bepaald.
· Zelfonsteking: Niet bepaald.	
· Ontploffingsgevaar: Het produkt is niet ontploffingsgevaarlijk.	
· Ontploffingsgrenzen:	
Onderste:	Niet bepaald.
Bovenste:	Niet bepaald.
· Dampspanning: Niet bepaald.	
Dichtheid bij 20 °C:	0,84159 g/cm ³
· Relatieve dichtheid	Niet bepaald.
· Dampdichtheid	Niet bepaald.
· Verdampingsnelheid	Niet bepaald.
· Oplosbaarheid in/mengbaarheid met Water: Niet resp. gering mengbaar.	
· Verdelingscoëfficiënt (n-octanol/water): Niet bepaald.	
· Viscositeit	
Dynamisch:	Niet bepaald.
Kinematisch:	Niet bepaald.
· Oplosmiddelgehalte:	
Organisch oplosmiddel:	0,0 %
Water:	1,0 %
VOC (EG)	0,00 %
· Overige informatie Geen verdere relevante informatie verkrijgbaar.	

10 Stabiliteit en reactiviteit

- **Reactiviteit**
- **Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

11 Toxicologische informatie

- **Informatie over toxicologische effecten**
- **Acute toxiciteit:**

· Indelingsrelevantie LD/LC50-waarden:		
77-86-1 trometamol		
Oraal	LD50	5900 mg/kg (rat)

- **Primaire aandoening:**
- **op de huid:** Geen prikkelend effect.
- **aan het oog:** Prikkeling

(Vervolg op blz. 6)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 04.04.2014

Herziening van: 04.04.2014

Handelsnaam: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Vervolg van blz. 5)

- **Overgevoeligheid:** Geen effect van overgevoeligheid bekend.

12 Ecologische informatie

- **Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **Gedrag in milieu-compartimenten:**
- **Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**
 Waterbezwaarlijkheid (NL) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.
 Gevaar voor water klasse 1 (D) (Zelfclassificatie): gevaar voor water klein
 Niet onverdund of in grote hoeveelheden lozen in grondwater, in oppervlaktewater of in de riolering.
 Wegspoelen van grotere hoeveelheden in rioleringen of waterlopen kan tot een stijging van de pH-waarde leiden.
 Een hoge pH-waarde beschadigt in het water levende organismen. In de verdunning van de toepassingsconcentratie vermindert de pH-waarde aanzienlijk, zodat na het gebruik van het product het afvalwater dat in de riolering geraakt maar een gering gevaar vormt voor het water.
- **Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

13 Instructies voor verwijdering

- **Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terecht komen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

14 Informatie met betrekking tot het vervoer

- | | |
|---|---------------------|
| · VN-nummer | |
| · ADR, ADN, IMDG, IATA | Niet van toepassing |
| · Juiste ladingnaam overeenkomstig de modelreglementen van de VN | |
| · ADR, ADN, IMDG, IATA | Niet van toepassing |
| · Transportgevarenklasse(n) | |
| · ADR, ADN, IMDG, IATA | |
| · klasse | Niet van toepassing |
| · Verpakkingsgroep: | |
| · ADR, IMDG, IATA | Niet van toepassing |
| · Milieugevaren: | |
| · Marine pollutant: | Neen |
| · Bijzondere voorzorgen voor de gebruiker | Niet bruikbaar. |

(Vervolg op blz. 7)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 04.04.2014

Herziening van: 04.04.2014

Handelsnaam: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Vervolg van blz. 6)

- | | |
|--|-----------------|
| · Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 en de IBC-code | Niet bruikbaar. |
| · VN "Model Regulation": | - |

15 Regelgeving

- **Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**

- **SZW-lijst van kankerverwekkende stoffen**

De stof is niet aanwezig.

- **SZW-lijst van mutagene stoffen**

De stof is niet aanwezig.

- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

De stof is niet aanwezig.

- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**

De stof is niet aanwezig.

- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

De stof is niet aanwezig.

- **Nationale voorschriften:**

- **Gevaarklasse v. water:** Waterbezwaarlijkheid (NL) 10: Saneringsinspanning A

- **Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

16 Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

- **Afkortingen en acroniemen:**

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 Harmonized 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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

Fiche de données de sécurité

selon 1907/2006/CE, Article 31

Date d'impression : 04.04.2014

Révision: 04.04.2014

1 Identification de la substance/du mélange et de la société/l'entreprise

- **Identificateur de produit**
- **Nom du produit:** TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE
- **Code du produit:** 11700, 11720
- **No CAS:**
77-86-1
- **Numéro CE:**
201-064-4
- **Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**
Pas d'autres informations importantes disponibles.
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **Numéro d'appel d'urgence:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Identification des dangers

- **Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



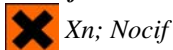
GHS07

Acute Tox. 4 H302 Nocif en cas d'ingestion.

Acute Tox. 4 H312 Nocif par contact cutané.

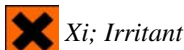
Acute Tox. 4 H332 Nocif par inhalation.

- **Classification selon la directive 67/548/CEE ou directive 1999/45/CE**



Xn; Nocif

R20/21/22: Nocif par inhalation, par contact avec la peau et par ingestion.



Xi; Irritant

R36: Irritant pour les yeux.

- **Indications particulières concernant les dangers pour l'homme et l'environnement:** Néant.

- **Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS07

(suite page 2)

Fiche de données de sécurité

selon 1907/2006/CE, Article 31

Date d'impression : 04.04.2014

Révision: 04.04.2014

Nom du produit: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(suite de la page 1)

- **Mention d'avertissement** Attention
- **Mentions de danger**
H302+H312+H332 Nocif en cas d'ingestion, de contact cutané ou d'inhalation.
- **Conseils de prudence**
 - P261 Éviter de respirer les poussières/fumées/gaz/brouillards/vapeurs/aérosols.
 - P280 Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage.
 - P322 Mesures spécifiques (voir sur cette étiquette).
 - P304+P340 EN CAS D'INHALATION: transporter la victime à l'extérieur et la maintenir au repos dans une position où elle peut confortablement respirer.
 - P420 Stocker à l'écart des agents d'oxydation.
 - P501 Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.
- **Autres dangers**
- **Résultats des évaluations PBT et vPvB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.

3 Composition/informations sur les composants

- **Caractérisation chimique: Substances**
- **No CAS Désignation**
77-86-1 trométamol
- **Code(s) d'identification**
- **Numéro CE:** 201-064-4

4 Premiers secours

- **Description des premiers secours**
- **Remarques générales:**
Les symptômes d'intoxication peuvent apparaître après de nombreuses heures seulement; une surveillance médicale est donc nécessaire au moins 48 heures après un accident.
- **Après inhalation:**
Donner de l'air frais. Assistance respiratoire si nécessaire. Tenir le malade au chaud. Si les troubles persistent, consulter un médecin.
En cas d'inconscience, coucher et transporter la personne en position latérale stable.
- **Après contact avec la peau:** En règle générale, le produit n'irrite pas la peau.
- **Après contact avec les yeux:**
Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières. Si les troubles persistent, consulter un médecin.
- **Après ingestion:** Consulter immédiatement un médecin.
- **Indications destinées au médecin:**
- **Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**
Pas d'autres informations importantes disponibles.

FR

(suite page 3)

Fiche de données de sécurité

selon 1907/2006/CE, Article 31

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Nom du produit: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(suite de la page 2)

5 Mesures de lutte contre l'incendie

- **Moyens d'extinction**
- **Moyens d'extinction:**
CO₂, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
- **Dangers particuliers résultant de la substance ou du mélange** Pas d'autres informations importantes disponibles.
- **Conseils aux pompiers**
- **Équipement spécial de sécurité:** Porter un appareil de protection respiratoire.

6 Mesures à prendre en cas de dispersion accidentelle

- **Précautions individuelles, équipement de protection et procédures d'urgence** Pas nécessaire.
- **Précautions pour la protection de l'environnement:**
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.
- **Méthodes et matériel de confinement et de nettoyage:**
Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).
Évacuer les matériaux contaminés en tant que déchets conformément au point 13.
Assurer une aération suffisante.
- **Référence à d'autres sections**
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.
Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

7 Manipulation et stockage

- **Manipulation:**
- **Précautions à prendre pour une manipulation sans danger**
Veiller à une bonne ventilation/aspiration du poste de travail.
Éviter la formation d'aérosols.
- **Préventions des incendies et des explosions:** Aucune mesure particulière n'est requise.
- **Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Aucune exigence particulière.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:** Tenir les emballages hermétiquement fermés.
- **Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

8 Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**
Sans autre indication, voir point 7.
- **Paramètres de contrôle**
- **Composants présentant des valeurs-seuil à surveiller par poste de travail:** Néant
- **Remarques supplémentaires:**
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.

(suite page 4)

Fiche de données de sécurité

selon 1907/2006/CE, Article 31

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Nom du produit: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(suite de la page 3)

- **Contrôles de l'exposition**
- **Equipement de protection individuel:**
- **Mesures générales de protection et d'hygiène:**
Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.
Retirer immédiatement les vêtements souillés ou humectés.
Se laver les mains avant les pauses et en fin de travail.
Eviter tout contact avec les yeux.
Eviter tout contact avec les yeux et avec la peau.
- **Protection respiratoire:**
En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.
- **Protection des mains:**



Gants de protection

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.

Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

- **Matériau des gants**
Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.
- **Temps de pénétration du matériau des gants**
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.
- **Protection des yeux:**



Lunettes de protection hermétiques

9 Propriétés physiques et chimiques

- **Informations sur les propriétés physiques et chimiques essentielles**
- **Indications générales**

- **Aspect:**

Forme:	Poudre
Couleur:	Blanc
Odeur:	Inodore
Seuil olfactif:	Non déterminé.

- **valeur du pH à 20 °C:** 11,5

- **Changement d'état**

Point de fusion:	Non déterminé.
Point d'ébullition:	220 °C

- **Point d'éclair** Non applicable.

- **Inflammabilité (solide, gazeux):** Non applicable.

(suite page 5)

Fiche de données de sécurité

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Nom du produit: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(suite de la page 4)

· Température d'inflammation:	
Température de décomposition:	Non déterminé.
· Auto-inflammation: Non déterminé.	
· Danger d'explosion: Le produit n'est pas explosif.	
· Limites d'explosion:	
Inférieure:	Non déterminé.
Supérieure:	Non déterminé.
· Pression de vapeur: Non déterminé.	
· Densité à 20 °C: 0,84159 g/cm ³	
· Densité relative Non déterminé.	
· Densité de vapeur. Non déterminé.	
· Vitesse d'évaporation Non déterminé.	
· Solubilité dans/miscibilité avec l'eau: Pas ou peu miscible	
· Coefficient de partage (n-octanol/eau): Non déterminé.	
· Viscosité:	
Dynamique:	Non déterminé.
Cinématique:	Non déterminé.
· Teneur en solvants:	
Solvants organiques:	0,0 %
Eau:	1,0 %
VOC (CE)	0,00 %
· Autres informations Pas d'autres informations importantes disponibles.	

10 Stabilité et réactivité

- **Réactivité**
- **Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **Conditions à éviter** Pas d'autres informations importantes disponibles.
- **Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

11 Informations toxicologiques

- **Informations sur les effets toxicologiques**
- **Toxicité aiguë:**

· Valeurs LD/LC50 déterminantes pour la classification:		
77-86-1 trométamol		
Oral	LD50	5900 mg/kg (rat)

- **Effet primaire d'irritation:**
- **de la peau:** Pas d'effet d'irritation.
- **des yeux:** Effet d'irritation.

(suite page 6)

Fiche de données de sécurité

selon 1907/2006/CE, Article 31

Date d'impression : 04.04.2014

Révision: 04.04.2014

Nom du produit: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(suite de la page 5)

· **Sensibilisation:** Aucun effet de sensibilisation connu.

12 Informations écologiques

- **Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **Comportement dans les compartiments de l'environnement:**
- **Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:**
 Catégorie de pollution des eaux 1 (D) (Classification propre): peu polluant
 Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.
 Jeter de plus grandes quantités dans la canalisation ou les eaux peut mener à une augmentation de la valeur du pH. Une valeur du pH élevée est nocive pour les organismes aquatiques. Dans la dilution de la concentration utilisée, la valeur du pH est réduite considérablement: après l'utilisation du produit, les eaux résiduelles arrivant dans la canalisation ne sont que faiblement polluantes pour l'eau.
- **Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **Autres effets néfastes** Pas d'autres informations importantes disponibles.

13 Considérations relatives à l'élimination

- **Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.

14 Informations relatives au transport

· No ONU	
· ADR, ADN, IMDG, IATA	néant
· Nom d'expédition des Nations unies	
· ADR, ADN, IMDG, IATA	néant
· Classe(s) de danger pour le transport	
· ADR, ADN, IMDG, IATA	
· Classe	néant
· Groupe d'emballage	
· ADR, IMDG, IATA	néant
· Dangers pour l'environnement:	
· Marine Pollutant:	Non
· Précautions particulières à prendre par l'utilisateur	Non applicable.

(suite page 7)

Fiche de données de sécurité

selon 1907/2006/CE, Article 31

Date d'impression : 04.04.2014

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Nom du produit: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(suite de la page 6)

- **Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC** Non applicable.
- **"Règlement type" de l'ONU:** -

15 Informations réglementaires

- **Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
Pas d'autres informations importantes disponibles.
- **Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

16 Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

· **Acronymes et abréviations:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized 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)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 Acute Tox. 4: Acute toxicity, Hazard Category 4

Sicherheitsdatenblatt

gemäß 1907/2006/EG, Artikel 31

Druckdatum: 04.04.2014

überarbeitet am: 04.04.2014

1 Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

- **Produktidentifikator**
- **Handelsname:** TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE
- **Artikelnummer:** 11700, 11720
- **CAS-Nummer:**
77-86-1
- **EG-Nummer:**
201-064-4
- **Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffes / des Gemisches** Laborchemikalien
- **Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com

Science Services
Goerzer Strasse 70
81549 München Germany
Tel: +49(0)89 159802 80
safety@scienceservices.de

24h Giftnotruf Munchen: +49 (0)89 19240
Toxikologische Abteilung der II. Medizinischen Klinik
rechts der Isar, Munchen. - www.toxinfo.org
- **Auskunftgebender Bereich:** Product safety department
- **Notrufnummer:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Mögliche Gefahren

- **Einstufung des Stoffs oder Gemischs**
- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



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Acute Tox. 4 H302 Gesundheitsschädlich bei Verschlucken.
Acute Tox. 4 H312 Gesundheitsschädlich bei Hautkontakt.
Acute Tox. 4 H332 Gesundheitsschädlich bei Einatmen.

- **Einstufung gemäß Richtlinie 67/548/EWG oder Richtlinie 1999/45/EG**



Xn; Gesundheitsschädlich

R20/21/22: Gesundheitsschädlich beim Einatmen, Verschlucken und Berührung mit der Haut.



Xi; Reizend

R36: Reizt die Augen.

(Fortsetzung auf Seite 2)

Sicherheitsdatenblatt

gemäß 1907/2006/EG, Artikel 31

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Handelsname: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Fortsetzung von Seite 1)

· **Besondere Gefahrenhinweise für Mensch und Umwelt:** Entfällt.

· **Kennzeichnungselemente**

· **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**

Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

· **Gefahrenpiktogramme**



GHS07

· **Signalwort** Achtung

· **Gefahrenhinweise**

H302+H312+H332 Gesundheitsschädlich bei Verschlucken, Hautkontakt oder Einatmen.

· **Sicherheitshinweise**

P261 Einatmen von Staub/Rauch/Gas/Nebel/Dampf/Aerosol vermeiden.

P280 Schutzhandschuhe/Schutzkleidung/Augenschutz/Gesichtsschutz tragen.

P322 Gezielte Maßnahmen (siehe auf diesem Kennzeichnungsetikett).

P304+P340 BEI EINATMEN: An die frische Luft bringen und in einer Position ruhigstellen, die das Atmen erleichtert.

P420 Von Oxidationsmitteln getrennt lagern.

P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.

· **Sonstige Gefahren**

· **Ergebnisse der PBT- und vPvB-Beurteilung**

· **PBT:** Nicht anwendbar.

· **vPvB:** Nicht anwendbar.

3 Zusammensetzung/Angaben zu Bestandteilen

· **Chemische Charakterisierung: Stoffe**

· **CAS-Nr. Bezeichnung**

77-86-1 Tris(hydroxymethyl)-aminomethan

· **Identifikationsnummer(n)**

· **EG-Nummer:** 201-064-4

4 Erste-Hilfe-Maßnahmen

· **Beschreibung der Erste-Hilfe-Maßnahmen**

· **Allgemeine Hinweise:**

Vergiftungssymptome können erst nach vielen Stunden auftreten, deshalb ärztliche Überwachung mindestens 48 Stunden nach einem Unfall.

· **Nach Einatmen:**

Frischluftzufuhr, gegebenenfalls Atemspende, Wärme. Bei anhaltenden Beschwerden Arzt konsultieren.

Bei Bewußtlosigkeit Lagerung und Transport in stabiler Seitenlage.

· **Nach Hautkontakt:** Im allgemeinen ist das Produkt nicht hautreizend.

· **Nach Augenkontakt:**

Augen mehrere Minuten bei geöffnetem Lidspalt unter fließendem Wasser spülen. Bei anhaltenden Beschwerden Arzt konsultieren.

· **Nach Verschlucken:** Sofort Arzt aufsuchen.

(Fortsetzung auf Seite 3)

Sicherheitsdatenblatt

gemäß 1907/2006/EG, Artikel 31

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überarbeitet am: 04.04.2014

Handelsname: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Fortsetzung von Seite 2)

- **Hinweise für den Arzt:**
- **Wichtigste akute und verzögert auftretende Symptome und Wirkungen**
Keine weiteren relevanten Informationen verfügbar.
- **Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung** Keine weiteren relevanten Informationen verfügbar.

5 Maßnahmen zur Brandbekämpfung

- **Löschmittel**
- **Geeignete Löschmittel:**
CO₂, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.
- **Besondere vom Stoff oder Gemisch ausgehende Gefahren** Keine weiteren relevanten Informationen verfügbar.
- **Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Atemschutzgerät anlegen.

6 Maßnahmen bei unbeabsichtigter Freisetzung

- **Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**
Nicht erforderlich.
- **Umweltschutzmaßnahmen:** Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.
- **Methoden und Material für Rückhaltung und Reinigung:**
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.
Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.
Für ausreichende Lüftung sorgen.
- **Verweis auf andere Abschnitte**
Informationen zur sicheren Handhabung siehe Abschnitt 7.
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.
Informationen zur Entsorgung siehe Abschnitt 13.

7 Handhabung und Lagerung

- **Handhabung:**
- **Schutzmaßnahmen zur sicheren Handhabung**
Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.
Aerosolbildung vermeiden.
- **Hinweise zum Brand- und Explosionsschutz:** Keine besonderen Maßnahmen erforderlich.
- **Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** Keine besonderen Anforderungen.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:** Behälter dicht geschlossen halten.
- **Lagerklasse:**
- **Klassifizierung nach Betriebsicherheitsverordnung (BetrSichV):** -
- **Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

8 Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.
- **Zu überwachende Parameter**
- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:** Entfällt.

(Fortsetzung auf Seite 4)

Sicherheitsdatenblatt

gemäß 1907/2006/EG, Artikel 31

Druckdatum: 04.04.2014

überarbeitet am: 04.04.2014

Handelsname: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Fortsetzung von Seite 3)

- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.
- **Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:**
 Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.
 Beschmutzte, getränkte Kleidung sofort ausziehen.
 Vor den Pausen und bei Arbeitsende Hände waschen.
 Berührung mit den Augen vermeiden.
 Berührung mit den Augen und der Haut vermeiden.
- **Atemschutz:**
 Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition umluftunabhängiges Atemschutzgerät verwenden.
- **Handschutz:**



Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden. Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

- **Handschuhmaterial**
 Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.
- **Durchdringungszeit des Handschuhmaterials**
 Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.
- **Augenschutz:**



Dichtschließende Schutzbrille

9 Physikalische und chemische Eigenschaften

- **Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**

- **Allgemeine Angaben**

- **Aussehen:**

Form:	Pulver
Farbe:	Weiß
· Geruch:	Geruchlos
· Geruchsschwelle:	Nicht bestimmt.

- **pH-Wert bei 20 °C:** 11,5

- **Zustandsänderung**

Schmelzpunkt/Schmelzbereich:	Nicht bestimmt.
Siedepunkt/Siedebereich:	220 °C

- **Flammpunkt:** Nicht anwendbar.

- **Entzündlichkeit (fest, gasförmig):** Nicht anwendbar.

(Fortsetzung auf Seite 5)

Sicherheitsdatenblatt

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Handelsname: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Fortsetzung von Seite 4)

· Zündtemperatur:	
· Zersetzungstemperatur:	Nicht bestimmt.
· Selbstentzündlichkeit: Nicht bestimmt.	
· Explosionsgefahr: Das Produkt ist nicht explosionsgefährlich.	
· Explosionsgrenzen:	
Untere:	Nicht bestimmt.
Obere:	Nicht bestimmt.
· Dampfdruck: Nicht bestimmt.	
· Dichte bei 20 °C:	0,84159 g/cm ³
· Relative Dichte	Nicht bestimmt.
· Dampfdichte	Nicht bestimmt.
· Verdampfungsgeschwindigkeit	Nicht bestimmt.
· Löslichkeit in / Mischbarkeit mit Wasser: Nicht bzw. wenig mischbar.	
· Verteilungskoeffizient (n-Octanol/Wasser): Nicht bestimmt.	
· Viskosität:	
Dynamisch:	Nicht bestimmt.
Kinematisch:	Nicht bestimmt.
· Lösemittelgehalt:	
Organische Lösemittel:	0,0 %
Wasser:	1,0 %
VOC (EU)	0,00 %
· Sonstige Angaben	Keine weiteren relevanten Informationen verfügbar.

10 Stabilität und Reaktivität

- **Reaktivität**
- **Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **Möglichlich gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

11 Toxikologische Angaben

- **Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität:**

· Einstufungsrelevante LD/LC50-Werte:	
77-86-1 Tris(hydroxymethyl)-aminomethan	
Oral	LD50 5900 mg/kg (rat)

- **Primäre Reizwirkung:**
- **an der Haut:** Keine Reizwirkung.
- **am Auge:** Reizwirkung.

(Fortsetzung auf Seite 6)

Sicherheitsdatenblatt

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Handelsname: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Fortsetzung von Seite 5)

· **Sensibilisierung:** Keine sensibilisierende Wirkung bekannt.

12 Umweltbezogene Angaben

- **Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **Verhalten in Umweltkompartimenten:**
- **Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**
Wassergefährdungsklasse 1 (Selbsteinstufung): schwach wassergefährdend
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
Wegspülen größerer Mengen in Kanalisation oder Gewässer kann zur pH-Wert-Erhöhung führen. Ein hoher pH-Wert schädigt Wasserorganismen. In der Verdünnung der Anwendungskonzentration reduziert sich der pH-Wert erheblich, so dass nach dem Gebrauch des Produktes die in die Kanalisation gelangenden Abwässer nur schwach wassergefährdend wirken.
- **Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

13 Hinweise zur Entsorgung

- **Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

14 Angaben zum Transport

<ul style="list-style-type: none"> · UN-Nummer · ADR, ADN, IMDG, IATA 	entfällt
<ul style="list-style-type: none"> · Ordnungsgemäße UN-Versandbezeichnung · ADR, ADN, IMDG, IATA 	entfällt
<ul style="list-style-type: none"> · Transportgefahrenklassen · ADR, ADN, IMDG, IATA · Klasse 	entfällt
<ul style="list-style-type: none"> · Verpackungsgruppe · ADR, IMDG, IATA 	entfällt
<ul style="list-style-type: none"> · Umweltgefahren: · Marine pollutant: 	Nein

(Fortsetzung auf Seite 7)

Sicherheitsdatenblatt

gemäß 1907/2006/EG, Artikel 31

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Handelsname: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Fortsetzung von Seite 6)

- **Besondere Vorsichtsmaßnahmen für den Verwender** Nicht anwendbar.
- **Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code** Nicht anwendbar.
- **UN "Model Regulation":** -

15 Rechtsvorschriften

- **Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
- **Nationale Vorschriften:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** -
- **Wassergefährdungsklasse: WGK 1 (Selbsteinstufung):** schwach wassergefährdend.
- **Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

16 Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

· **Abkürzungen und Akronyme:**

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 Harmonized 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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 04.04.2014

Revisione: 04.04.2014

1 Identificazione della sostanza o della miscela e della società/impresa

- **Identificatore del prodotto**
- **Denominazione commerciale:** TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE
- **Articolo numero:** 11700, 11720
- **Numero CAS:**
77-86-1
- **Numeri CE:**
201-064-4
- **Usi pertinenti identificati della sostanza o miscela e usi sconsigliati** Non sono disponibili altre informazioni.
- **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio
- **Informazioni sul fornitore della scheda di dati di sicurezza**
- **Produttore/fornitore:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Società Italiana Chimici**
Via Rio Nell Ellba 140
00138 Rome, Italy
Tel: 39 06 8800211
Fax: 39 30 06 8815313
Web: www.sichim.com
- **Informazioni fornite da:** Product safety department
- **Numero telefonico di emergenza:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Identificazione dei pericoli

- **Classificazione della sostanza o della miscela**
- **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS07

Acute Tox. 4 H302 Nocivo se ingerito.
Acute Tox. 4 H312 Nocivo per contatto con la pelle.
Acute Tox. 4 H332 Nocivo se inalato.

- **Classificazione secondo la direttiva 67/548/CEE o direttiva 1999/45/CE**



Xn; Nocivo

R20/21/22: Nocivo per inalazione, contatto con la pelle e per ingestione.



Xi; Irritante

R36: Irritante per gli occhi.

- **Indicazioni di pericolosità specifiche per l'uomo e l'ambiente:** Viene meno.

(continua a pagina 2)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 04.04.2014

Revisione: 04.04.2014

Denominazione commerciale: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Segue da pagina 1)

- **Elementi dell'etichetta**
- **Etichettatura secondo il regolamento (CE) n. 1272/2008**
La sostanza è classificata ed etichettata conformemente al regolamento CLP.
- **Pittogrammi di pericolo**



GHS07

- **Avvertenza** *Attenzione*
- **Indicazioni di pericolo**
H302+H312+H332 Nocivo se ingerito, a contatto con la pelle o se inalato.
- **Consigli di prudenza**
 - P261 Evitare di respirare la polvere/i fumi/i gas/la nebbia/i vapori/gli aerosol.*
 - P280 Indossare guanti/indumenti protettivi/Proteggere gli occhi/il viso.*
 - P322 Misure specifiche (vedere su questa etichetta).*
 - P304+P340 IN CASO DI INALAZIONE: trasportare l'infortunato all'aria aperta e mantenerlo a riposo in posizione che favorisca la respirazione.*
 - P420 Conservare lontano dal ossidanti.*
 - P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.*
- **Altri pericoli**
- **Risultati della valutazione PBT e vPvB**
- **PBT:** *Non applicabile.*
- **vPvB:** *Non applicabile.*

3 Composizione/informazioni sugli ingredienti

- **Caratteristiche chimiche:** *Sostanze*
- **Numero CAS**
77-86-1 trometamolo
- **Numero/i di identificazione**
- **Numeri CE:** *201-064-4*

4 Misure di primo soccorso

- **Descrizione delle misure di primo soccorso**
- **Indicazioni generali:**
I sintomi di avvelenamento possono comparire dopo molte ore, per tale motivo è necessaria la sorveglianza di un medico nelle 48 ore successive all'incidente.
- **Inalazione:**
Portare in zona ben areata, praticare eventualmente la respirazione artificiale, tenere al caldo. Se i disturbi persistono consultare il medico.
Se il soggetto è svenuto provvedere a tenerlo durante il trasporto in posizione stabile su un fianco.
- **Contatto con la pelle:** *Generalmente il prodotto non è irritante per la pelle.*
- **Contatto con gli occhi:**
Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte Se persiste il dolore consultare il medico.
- **Ingestione:** *Chiamare subito il medico.*

(continua a pagina 3)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 04.04.2014

Revisione: 04.04.2014

Denominazione commerciale: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Segue da pagina 2)

- **Indicazioni per il medico:**
- **Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **Indicazione della eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**
Non sono disponibili altre informazioni.

5 Misure antincendio

- **Mezzi di estinzione**
- **Mezzi di estinzione idonei:**
CO₂, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.
- **Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.
- **Raccomandazioni per gli addetti all'estinzione degli incendi**
- **Mezzi protettivi specifici:** Indossare il respiratore.

6 Misure in caso di rilascio accidentale

- **Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza** Non necessario.
- **Precauzioni ambientali:** Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.
- **Metodi e materiali per il contenimento e per la bonifica:**
Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).
Smaltimento del materiale contaminato conformemente al punto 13.
Provvedere ad una sufficiente areazione.
- **Riferimento ad altre sezioni**
Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.
Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.
Per informazioni relative allo smaltimento vedere Capitolo 13.

7 Manipolazione e immagazzinamento

- **Manipolazione:**
- **Precauzioni per la manipolazione sicura**
Accurata ventilazione/aspirazione nei luoghi di lavoro.
Evitare la formazione di aerosol.
- **Indicazioni in caso di incendio ed esplosione:** Non sono richiesti provvedimenti particolari.
- **Condizioni per l'immagazzinamento sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:** Mantenere i recipienti ermeticamente chiusi.
- **Usi finali specifici** Non sono disponibili altre informazioni.

8 Controllo dell'esposizione/protezione individuale

- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.
- **Parametri di controllo**
- **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:** Non Necessario.
- **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.

(continua a pagina 4)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 04.04.2014

Revisione: 04.04.2014

Denominazione commerciale: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Segue da pagina 3)

- **Controlli dell'esposizione**
- **Mezzi protettivi individuali:**
- **Norme generali protettive e di igiene del lavoro:**
Tenere lontano da cibo, bevande e foraggi.
Togliere immediatamente gli abiti contaminati.
Lavarsi le mani prima dell'intervallo o a lavoro terminato.
Evitare il contatto con gli occhi.
Evitare il contatto con gli occhi e la pelle.
- **Maschera protettiva:**
Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.
- **Guanti protettivi:**



Guanti protettivi

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione. A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche. Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

- **Materiale dei guanti**
La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.
- **Tempo di permeazione del materiale dei guanti**
Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.
- **Occhiali protettivi:**



Occhiali protettivi a tenuta

9 Proprietà fisiche e chimiche

· Informazioni sulle proprietà fisiche e chimiche fondamentali

· Indicazioni generali

· Aspetto:

· Forma:	Polvere
· Colore:	Bianco
· Odore:	Inodore
· Soglia olfattiva:	Non definito.

· **valori di pH a 20 °C:** 11,5

· Cambiamento di stato

· Temperatura di fusione/ambito di fusione:	Non definito.
· Temperatura di ebollizione/ambito di ebollizione:	220 °C

· **Punto di infiammabilità:** Non applicabile.

· **Infiammabilità (solido, gassoso):** Non applicabile.

(continua a pagina 5)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 04.04.2014

Revisione: 04.04.2014

Denominazione commerciale: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Segue da pagina 4)

· Temperatura di accensione:	
Temperatura di decomposizione:	Non definito.
· Autoaccensione: Non definito.	
· Pericolo di esplosione: Prodotto non esplosivo.	
· Limiti di infiammabilità:	
Inferiore:	Non definito.
Superiore:	Non definito.
· Tensione di vapore: Non definito.	
· Densità a 20 °C:	0,84159 g/cm ³
· Densità relativa	Non definito.
· Densità del vapore	Non definito.
· Velocità di evaporazione	Non definito.
· Solubilità in/Miscibilità con acqua: Poco e/o non miscibile.	
· Coefficiente di distribuzione (n-Octanol/acqua): Non definito.	
· Viscosità:	
Dinamica:	Non definito.
Cinematica:	Non definito.
· Tenore del solvente:	
Solventi organici:	0,0 %
Acqua:	1,0 %
VOC (CE)	0,00 %
· Altre informazioni Non sono disponibili altre informazioni.	

10 Stabilità e reattività

- **Reattività**
- **Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **Condizioni da evitare** Non sono disponibili altre informazioni.
- **Materiali incompatibili:** Non sono disponibili altre informazioni.
- **Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

11 Informazioni tossicologiche

- **Informazioni sugli effetti tossicologici**
- **Tossicità acuta:**

· **Valori LD/LC50 rilevanti per la classificazione:**

77-86-1 trometamolo

Orale	LD50	5900 mg/kg (rat)
-------	------	------------------

- **Irritabilità primaria:**
- **sulla pelle:** Non ha effetti irritanti.
- **sugli occhi:** Irritante.

(continua a pagina 6)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 04.04.2014

Revisione: 04.04.2014

Denominazione commerciale: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

· **Sensibilizzazione:** Non si conoscono effetti sensibilizzanti.

(Segue da pagina 5)

12 Informazioni ecologiche

- **Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- **Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **Comportamento in compartimenti ecologici:**
- **Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**
Pericolosità per le acque classe 1 (D) (Autoclassificazione): poco pericoloso
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.
Dilavare grandi quantità nella fognatura o in corpi d'acqua può risultare in un aumento del valore pH. Un alto valore pH danneggia gli organismi acquatici. Nella diluizione della concentrazione d'uso si riduce il valore pH notevolmente, cosicché dopo l'uso del prodotto le acque di scarico che raggiungono la fognatura sono soltanto poco pericolose per l'acqua.
- **Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **Altri effetti avversi** Non sono disponibili altre informazioni.

13 Considerazioni sullo smaltimento

- **Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.

14 Informazioni sul trasporto

· Numero ONU	
· ADR, ADN, IMDG, IATA	non applicabile
· Nome di spedizione dell'ONU	
· ADR, ADN, IMDG, IATA	non applicabile
· Classi di pericolo connesso al trasporto	
· ADR, ADN, IMDG, IATA	
· Classe	non applicabile
· Gruppo di imballaggio	
· ADR, IMDG, IATA	non applicabile
· Pericoli per l'ambiente:	
· Marine pollutant:	No
· Precauzioni speciali per gli utilizzatori	Non applicabile.

(continua a pagina 7)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 04.04.2014

Revisione: 04.04.2014

Denominazione commerciale: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(Segue da pagina 6)

- | | |
|--|------------------|
| · Trasporto di rinfuse secondo l'allegato II di MARPOL 73/78 ed il codice IBC | Non applicabile. |
| · UN "Model Regulation": | - |

15 Informazioni sulla regolamentazione

- **Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
Non sono disponibili altre informazioni.
- **Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

16 Altre informazioni

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

· **Abbreviazioni e acronimi:**

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 Harmonized 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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

IT

안전지침서

제31조의 1907/2006/EC에 따라

기압점: 2014.04.04

개정: 2014.04.04

1 화학제품과 회사에 관한 정보

- 제품 식별자
- 제품명: **TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE**
- 상품번호: 11700, 11720
- CAS-번호
77-86-1
- EC 의번호:
201-064-4
- 해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도 추가적인 정보가 존재하지 않습니다.
- 제품의 권고 용도와 사용상의 제한: 실험실 화학품
- 안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보
- 제조자/수입자/유통업자 정보:
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- Samchang Commercial Co., Ltd.
Yeo Eui Do
PO Box 1110
Seoul, Korea
Tel: 82 2 703 3040
Fax: 82 2 717 3298
- 추가적인 정보 획득 가능: Product safety department
- 비상연락 전화번호:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 유해성.위험성

- 순물질 또는 혼합물의 분류



심한 눈 손상/자극성 구분2 H319 눈에 심한 자극을 일으킴

- 라벨표기 요소
- GHS 라벨 요소
본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- 그림문자



GHS07

- 신호어 경고
- 유해.위험 문구
눈에 심한 자극을 일으킴
- 예방조치 문구
(보호장갑·보호의·보안경·안면보호구)를(을) 착용하십시오.
눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으시오.

(2 쪽에 계속)

안전지침서

제31조의 1907/2006/EC에 따라

기압점: 2014.04.04

개정: 2014.04.04

제품명: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(1 쪽부터계속)

눈에 자극이 지속되면 의학적인 조치·조언을 구하십시오.
산화제와 떨어진 곳에 보관
용기는 환기가 잘 되는 곳에 단단히 밀폐하여 저장하십시오.
현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

- 기타 유해성
- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

3 구성성분의 명칭 및 함유량

- 화학적 특성: 화학물질
- CAS-번호표시
77-86-1 trometamol
- 식별 번호
- EC 의번호: 201-064-4

4 응급조치 요령

- 응급조치요령 내용
- 일반적 정보:
중독 증상은 몇 시간 이 지난 뒤에 발생할 수 있다. 따라서 사고가 발생한 후에 적어도 48 시간 동안은 의료진의 관찰을 받아야 한다.
- 흡입했을 때:
신선한 공기를 쐬고, 필요할 경우에는 산소 호흡기의 도움을 받는다. 환자를 따뜻하게 하고, 증상이 지속될 경우에는 의료진의 도움을 구한다.
환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.
- 피부에 접촉했을 때: 일반적으로 이 제품은 피부에 자극적이지 않다.
- 눈에 들어갔을 때: 흐르는 물에 눈을 몇분동안 씻어내고나서, 증상이 지속될 경우에는 의사와 상담한다
- 먹었을 때: 즉시 의사의 도움을 구한다.
- 기타 의사의 주의사항:
가장 중요한 급·만성 증상 및 영향 추가적인 정보가 존재하지 않습니다.
즉각적인 의료처치 및 특별치료가 필요함을 시사하는 징후 추가적인 정보가 존재하지 않습니다.

5 폭발·화재시 대처방법

- 소화제
- 적절한 소화제:
이산화탄소, 진화용 석회 가루 또는 물 방사를 사용하고, 더 큰 화재는 물을 분사하거나 알코올이 함유된 거품으로 끈다.
- 본 화학물질이나 혼합물에서 발생하는 특별 유해성 추가적인 정보가 존재하지 않습니다.
- 소방관에 대한 권고사항
- 화재 진압 시 착용할 보호구 및 예방조치: 호흡보호장비설치.

6 누출 사고 시 대처방법

- 개인적 예방조치, 보호장비 및 응급처치 절차 필요없음.
- 환경 관련 예방조치: 하수도망/해수면위의물/지하수로도달하지않게한다.
- 밀폐 및 정화 방법과 소재:
액체가 혼합된 물질(모래, 규조토, 산성 결합물, 일반 결합물, 톱밥)에 흡입되도록 한다.

(3 쪽에계속)

안전지침서

제31조의 1907/2006/EC에 따라

기압점: 2014.04.04

개정: 2014.04.04

제품명: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(2 쪽부터계속)

항목 13에 따라 오염된 물질을 쓰레기로 처분한다.
충분한 환기가 되도록 한다.

· 타 섹션 참조

안전 관리에 대한 정보는 제7 장 을 참고하시오.
개인 보호 장비에 대한 정보는 제8 장 을 참고하시오.
쓰레기 처리에 대한 정보는 제13 장 을 참고하시오.

7 취급 및 저장방법

· 취급:

· 안전 취급을 위한 예방조치

작업장에서는통풍이잘 되고/습기제거가잘 되게주의한다.
연무질이형성되는것을피한다.

· 화재 및 폭발 사고 예방대책에 관한 정보: 특 별 한 조 치 가 필 요없음.

· 혼합위험성 등 안전 저장 조건

· 보관:

· 안전한 저장 방법: 특 별 한 요 구 사 항 이 없 음.

· 하나의 공동 보관 시설에 대한 보관 관련 정보: 필 요 없 음

· 보관 조건에 관한 추가적인 정보: 용기를 새지않게밀폐한채보관한다.

· 구체적인 최종 사용자 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

· 첨단시설 디자인에 대한 추가정보: 더 이 상 의 자 료 는 없 음. 항 목 7 을 참 고 하 시 오.

· 통제 변수

· 화학물질의 노출기준, 생물학적 노출기준 등: 생략

· 추 가 정 보: 제 조 할 당 시 에 유 효 한 목 록 을 기 초 로 사 용 했 다.

· 노출 통제

· 개인 보호구

· 일반적보호조치및위생조치:

식료품, 음료수와 사료로부터 멀리 떨어져 두어 놓는다.

더러워지거나 음료수가 묻은 옷은 즉시 탈의한다.

휴식 전 이 나 작업이 끝날때마다 손을 씻는다.

눈과의 접촉을 피한다.

눈과 피부와의 접촉은 피한다.

· 호흡기 보호:

단 시간 또는 경미한 오염의 경우에는 호흡 여과기를 사용한다. 심각한 또는 장 기간 노출시에는 호흡보호장비를 사용한다.

· 손 보호:



보호용 장갑

장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.

테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합물에 적합한 장갑재질에 대한 추천이 없다.

투과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

· 장갑의재료

적합한장갑의선정은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선정되어야한다.

· 장갑 재료의 투과 시간 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

(4 쪽에계속)

안전지침서

제31조의 1907/2006/EC에 따라

기압점: 2014.04.04

개정: 2014.04.04

제품명: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

· 눈 보호:

(3 쪽부터계속)



· 팍조이는보안경

9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보	
· 일반정보	
· 외형	
· 물리적 상태:	가루
· 색:	하얀
· 냄새:	무취의
· 후각역치	알맞지않다.
· pH 의경우 20 °C:	11.5
· 상태변화	
· 녹는점/어는점:	맞지않는
· 초기 끓는점과 끓는점 범위:	220 °C
· 인화점:	해당사항 없음.
· 인화성(고체, 기체):	해당사항 없음.
· 점화온도:	
· 분해 온도:	알맞지않다.
· 자기점화:	알맞지않다.
· 폭발위험:	이제품은폭발위험성이없다
· 인화 또는 폭발 범위의 상한/하한	
· 아래로:	알맞지않다.
· 위로:	알맞지않다.
· 증기압:	알맞지않다.
· 밀도 의경우 20 °C:	0.84159 g/cm ³
· 비중:	알맞지않다.
· 증기밀도:	알맞지않다.
· 증발 속도:	알맞지않다.
· 용해도:	
· 물:	각각의경우에따라서는거의혼합할수없는
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도:	
· 역학성:	알맞지않다.
· 동점성:	알맞지않다.
· 용매내용물	
· 유기용매:	0.0 %
· 물:	1.0 %
· VOC (EU)	0.00 %

(5 쪽에계속)

안전지침서

제31조의 1907/2006/EC에 따라

기압점: 2014.04.04

개정: 2014.04.04

제품명: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(5 쪽부터계속)

- 비위생적 포장:
- 권고: 당국의지침에입각한쓰레기처리.

14 운송에 필요한 정보

· 유엔 번호 · ADR, ADN, IMDG, IATA	누락되다
· UN 적정 선적명 · ADR, ADN, IMDG, IATA	누락되다
· 교통 위험 클래스 · ADR, ADN, IMDG, IATA · 등급	누락되다
· 용기등급 · ADR, IMDG, IATA	누락되다
· 환경적 유해물질: · 해양오염물질:	아니오
· 이용자 특별 예방조치	해당사항 없음.
· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송	해당사항 없음.
· UN "모범 규제":	-

15 법적 규제현황

- 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory		
77-86-1	trometamol	KE-01403
7732-18-5	water, distilled, conductivity or of similar purity	KE-35400

- GHS 라벨 요소
본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- 위험 도표



GHS07

- 표지어 경고
- 위험 문구
눈에 심한 자극을 일으킴
- 주의 문구
(보호장갑·보호의·보안경·안면보호구)를(을) 착용하십시오.
눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으시오.
눈에 자극이 지속되면 의학적인 조치·조언을 구하십시오.
산화제와 떨어진 곳에 보관
용기는 환기가 잘 되는 곳에 단단히 밀폐하여 저장하십시오.

(7 쪽에계속)

안전지침서

제31조의 1907/2006/EC에 따라

기압점: 2014.04.04

개정: 2014.04.04

제품명: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(6 쪽부터계속)

- 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출
- **화학물질 안전성 평가:** 화학물질 안전성 평가가 수행되지 않음

16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은 기술하지않았으며계약적인법률관계에기반을두고있지도않다

- **최초 작성일자:** 2014.04.04
- **개정 횟수 및 최종 개정일자:** 1 / 2014.04.04
- **약어와 두문자어:**

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

EINECS: European Inventory of Existing Commercial Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

심한 눈 손상/자극성 구분2: Serious eye damage/eye irritation, Hazard Category 2

KR

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 04.04.2014

Revisión: 04.04.2014

1 Identificación de la sustancia o la mezcla y de la sociedad o la empresa

- **Identificador del producto**
- **Nombre comercial:** *TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE*
- **Número del artículo:** 11700, 11720
- **Número CAS:**
77-86-1
- **Número CE:**
201-064-4
- **Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**
No existen más datos relevantes disponibles.
- **Utilización del producto / de la elaboración** *Sustancias químicas de laboratorio*
- **Datos del proveedor de la ficha de datos de seguridad**
- **Fabricante/distribuidor:**
*Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com*
- Aname
C/ Perez Galdos no. 2
28693 Quijorna
Madrid, Spain
Tel: +34.91.816.89.50
Fax: +34.91.816.85.94
email: ventas@aname.es*
- **Área de información:** *Product safety department*
- **Teléfono de emergencia:**
*ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887*

2 Identificación de los peligros

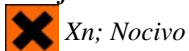
- **Clasificación de la sustancia o de la mezcla**
- **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS07

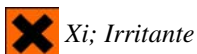
*Acute Tox. 4 H302 Nocivo en caso de ingestión.
Acute Tox. 4 H312 Nocivo en contacto con la piel.
Acute Tox. 4 H332 Nocivo en caso de inhalación.*

- **Clasificación con arreglo a la Directiva 67/548/CEE o Directiva 1999/45/CE**



Xn; Nocivo

R20/21/22: Nocivo por inhalación, por ingestión y en contacto con la piel.



Xi; Irritante

R36: Irrita los ojos.

- **Indicaciones adicionales sobre los riesgos para personas y el medio ambiente:** *Nulo*

(se continua en página 2)

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 04.04.2014

Revisión: 04.04.2014

Nombre comercial: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(se continua en página 1)

- **Elementos de la etiqueta**
- **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**
La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.
- **Pictogramas de peligro**



GHS07

- **Palabra de advertencia** Atención
- **Indicaciones de peligro**
H302+H312+H332 Nocivo en caso de ingestión, contacto con la piel o inhalación.
- **Consejos de prudencia**
 - P261 Evitar respirar el polvo/el humo/el gas/la niebla/los vapores/el aerosol.
 - P280 Llevar guantes/prendas/gafas/máscara de protección.
 - P322 Se necesitan medidas específicas (ver en esta etiqueta).
 - P304+P340 EN CASO DE INHALACIÓN: Transportar a la víctima al exterior y mantenerla en reposo en una posición confortable para respirar.
 - P420 Almacenar alejado de agentes oxidantes.
 - P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.
- **Otros peligros**
- **Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.

3 Composición/información sobre los componentes

- **Caracterización química:** Sustancias
- **Denominación N° CAS**
77-86-1 trometamol
- **Número(s) de identificación**
- **Número CE:** 201-064-4

4 Primeros auxilios

- **Descripción de los primeros auxilios**
- **Instrucciones generales:**
Los síntomas de intoxicación pueden presentarse después de muchas horas, por lo que se requiere una supervisión médica durante un mínimo de 48 horas después del accidente.
- **En caso de inhalación del producto:**
Suministrar aire fresco; eventualmente hacer respiración artificial, calor. Si los trastornos persisten, consultar al médico.
Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.
- **En caso de contacto con la piel:** Por regla general, el producto no irrita la piel.
- **En caso de con los ojos:**
Limpiar los ojos abiertos durante varios minutos con agua corriente. En caso de trastornos persistentes consultar un médico.
- **En caso de ingestión:** Consultar inmediatamente un médico.
- **Indicaciones para el médico:**
- **Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.

(se continua en página 3)

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 04.04.2014

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Nombre comercial: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(se continua en página 2)

- **Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**
No existen más datos relevantes disponibles.

5 Medidas de lucha contra incendios

- **Medios de extinción**
- **Sustancias extintoras apropiadas:**
CO₂, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.
- **Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.
- **Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** Colocarse la protección respiratoria.

6 Medidas en caso de vertido accidental

- **Precauciones personales, equipo de protección y procedimientos de emergencia** No es necesario.
- **Precauciones relativas al medio ambiente:**
Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.
- **Métodos y material de contención y de limpieza:**
Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).
Desechar el material contaminado como vertido según ítem 13.
Asegurar suficiente ventilación.
- **Referencia a otras secciones**
Ver capítulo 7 para mayor información sobre una manipulación segura.
Ver capítulo 8 para mayor información sobre el equipo personal de protección.
Para mayor información sobre cómo desechar el producto, ver capítulo 13.

7 Manipulación y almacenamiento

- **Manipulación:**
- **Precauciones para una manipulación segura**
Asegurar suficiente ventilación /aspiración en el puesto de trabajo.
Evitar la formación de aerosoles.
- **Prevención de incendios y explosiones:** No se requieren medidas especiales.
- **Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** No se requieren medidas especiales.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**
Mantener el recipiente cerrado herméticamente.
- **Usos específicos finales** No existen más datos relevantes disponibles.

8 Controles de exposición/protección individual

- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**
Sin datos adicionales, ver punto 7.
- **Parámetros de control**
- **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:** Nulo.
- **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.

(se continua en página 4)

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fecha de impresión 04.04.2014

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Nombre comercial: TRIS (HYDROXYMETHYL) AMINOMETHANE, FREE-BASE, REAGENT GRADE

(se continua en página 3)

- **Controles de la exposición**
- **Equipo de protección individual:**
- **Medidas generales de protección e higiene:**
 Mantener alejado de alimentos, bebidas y alimentos para animales.
 Quitarse de inmediato la ropa ensuciada o impregnada.
 Lavarse las manos antes de las pausas y al final del trabajo.
 Evitar el contacto con los ojos.
 Evitar el contacto con los ojos y la piel.
- **Protección respiratoria:**
 Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.
- **Protección de manos:**



Guantes de protección

- El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.
 Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.
 Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.
- **Material de los guantes**
 La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.
 - **Tiempo de penetración del material de los guantes**
 El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.
 - **Protección de ojos:**



Gafas de protección herméticas

9 Propiedades físicas y químicas

- **Información sobre propiedades físicas y químicas básicas**
- **Datos generales**
- **Aspecto:**

Forma:	En polvo
Color:	Blanco
- **Olor:** Inodoro
- **Umbral olfativo:** No determinado.
- **valor pH a 20 °C:** 11,5
- **Cambio de estado**

Punto de fusión /campo de fusión:	Indeterminado.
Punto de ebullición /campo de ebullición:	220 °C
- **Punto de inflamación:** No aplicable.
- **Inflamabilidad (sólido, gaseiforme):** No aplicable.

(se continua en página 5)

Ficha de datos de seguridad

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(se continua en página 4)

· Temperatura de ignición:	
· Temperatura de descomposición:	No determinado.
· Autoinflamabilidad: No determinado.	
· Peligro de explosión: El producto no es explosivo.	
· Límites de explosión:	
· Inferior:	No determinado.
· Superior:	No determinado.
· Presión de vapor: No determinado.	
· Densidad a 20 °C: 0,84159 g/cm ³	
· Densidad relativa No determinado.	
· Densidad de vapor No determinado.	
· Velocidad de evaporación No determinado.	
· Solubilidad en / miscibilidad con agua: Poco o no mezclable.	
· Coefficiente de reparto (n-octanol/agua): No determinado.	
· Viscosidad:	
· Dinámica:	No determinado.
· Cinemática:	No determinado.
· Concentración del disolvente:	
· Disolventes orgánicos:	0,0 %
· Agua:	1,0 %
· VOC (CE)	0,00 %
· Información adicional No existen más datos relevantes disponibles.	

10 Estabilidad y reactividad

- **Reactividad**
- **Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **Possibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **Materiales incompatibles:** No existen más datos relevantes disponibles.
- **Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

11 Información toxicológica

- **Información sobre los efectos toxicológicos**
- **Toxicidad aguda:**

· **Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:**

77-86-1 trometamol

Oral	LD50	5900 mg/kg (rat)
------	------	------------------

- **Efecto estimulante primario:**
- **en la piel:** No produce irritaciones.
- **en el ojo:** Produce irritaciones.

(se continua en página 6)

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(se continua en página 5)

· **Sensibilización:** No se conoce ningún efecto sensibilizante.

12 Información ecológica

- **Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **Comportamiento en sistemas ecológicos:**
- **Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
 Nivel de riesgo para el agua 1 (autoclasificación): escasamente peligroso para el agua
 En estado no diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
 El vertido de grandes cantidades en la canalización o en las aguas puede causar un aumento del valor pH. Un valor de pH alto es nocivo para los organismos acuáticos. En la dilución de la concentración de la aplicación, el valor pH se reduce considerablemente, de modo que después de utilizar el producto, las aguas residuales vertidas en la canalización son mínimamente dañinas para el agua.
- **Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **Otros efectos adversos** No existen más datos relevantes disponibles.

13 Consideraciones relativas a la eliminación

- **Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.

14 Información relativa al transporte

- | | |
|---|---------------|
| · Número UN | |
| · ADR, ADN, IMDG, IATA | suprimido |
| · Designación oficial de transporte de las Naciones Unidas | |
| · ADR, ADN, IMDG, IATA | suprimido |
| · Clase(s) de peligro para el transporte | |
| · ADR, ADN, IMDG, IATA | |
| · Clase | suprimido |
| · Grupo de embalaje | |
| · ADR, IMDG, IATA | suprimido |
| · Peligros para el medio ambiente: | |
| · Contaminante marino: | No |
| · Precauciones particulares para los usuarios | No aplicable. |

(se continua en página 7)

Ficha de datos de seguridad

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(se continua en página 6)

· **Transporte a granel con arreglo al anexo II del Convenio Marpol 73/78 y del Código IBC** No aplicable.

· **"Reglamentación Modelo" de la UNECE:** -

15 Información reglamentaria

· **Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**

No existen más datos relevantes disponibles.

· **Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

16 Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

· **Abreviaturas y acrónimos:**

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 Harmonized 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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4