

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

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Version number 14.02

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

· **1.1 Product identifier**

· **Trade name:** TRIS

· **Article number:** A1379

· **CAS Number:**

77-86-1

· **EC number:**

201-064-4

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

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

· **Life cycle stages** F Formulation or re-packing

· **Sector of Use**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU24 Scientific research and development

· **Product category**

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

· **Process category**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC15 Use as laboratory reagent

· **Environmental release category**

ERC2 Formulation into mixture

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

· **Application of the substance / the mixture** Laboratory chemical

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

AppliChem GmbH

Ottoweg 4

D-64291 Darmstadt

Tel.: +49 (0)6151 93570

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msds@applichem.com

· **Further information obtainable from:** Dept. Compliance

· **1.4 Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

**SECTION 2: Hazards identification**

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

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

· **2.2 Label elements**

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

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- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Description**  
77-86-1 TRIS
- **Identification number(s)**
- **EC number:** 201-064-4

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Immediately rinse with water.  
If skin irritation continues, consult a doctor.
- **After eye contact:**  
Rinse opened eye for several minutes under running water.  
Seek medical treatment.
- **After swallowing:**  
Rinse out mouth.  
make victim drink water (maximum of 2 drinking glasses)  
If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
Water, CO<sub>2</sub>, foam, powder.  
Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.  
In case of fire, the following can be released:  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon monoxide and carbon dioxide  
Non-combustible.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
 Avoid formation of dust.  
 Do not inhale dust.  
 Ensure adequate ventilation
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
 Pick up mechanically.  
 Avoid formation of dust.  
 Clean up affected area.
- **6.4 Reference to other sections**  
 See Section 7 for information on safe handling.  
 See Section 8 for information on personal protection equipment.  
 See Section 13 for disposal information.

## SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Provide suction extractors if dust is formed.
- **Information about fire - and explosion protection:** The product is not flammable.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Provide alkali-resistant floor.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container sealed.
- **Recommended storage temperature:** Room Temperature
- **Storage class:** 13
- **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.

### · DNELs

Oral	Long-term - systemic effects, general population	8.3 mg/kg
Dermal	Long-term - systemic effects, worker	166.7 mg/kg
	Long term - systemic effects, general population	83.3 mg/kg
Inhalative	Long-term - systemic effects, worker	117.5 mg/m <sup>3</sup>
	Long-term - systemic effects, general population	29 mg/m <sup>3</sup>

### · PNECs

Sewage treatment plant	300 mg/L
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- **Additional information:** The lists valid during the making were used as basis.

### · 8.2 Exposure controls

- **Appropriate engineering controls** No further data; see item 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**  
 Immediately remove all soiled and contaminated clothing
- **Respiratory protection:**  
 Filter P2  
 Required when dusts are generated.
- **Hand protection**  
 The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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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.

· **For the permanent contact gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.11$  mm

Value for the permeation: Level  $\geq 480$  min

· **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.11$  mm

Value for the permeation: Level  $\geq 480$  min

· **Eye/face protection** Safety glasses

· **Body protection:** Protective work clothing

**SECTION 9: Physical and chemical properties**

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

· **General Information**

· **Physical state**

Solid

· **Colour:**

White

· **Odour:**

Product specific

· **Odour threshold:**

Not determined.

· **Melting point/freezing point:**

169-172 °C

· **Boiling point or initial boiling point and boiling range**

288 °C

· **Flammability**

Product is not flammable.

· **Lower and upper explosion limit**

· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Flash point:**

Not applicable.

· **Auto-ignition temperature:**

Not determined.

· **Decomposition temperature:**

Not determined.

· **pH**

10.2-10.6

· **Viscosity:**

· **Kinematic viscosity**

Not applicable.

· **Dynamic:**

Not applicable.

· **Solubility**

· **water at 20 °C:**

~680 g/l

· **Partition coefficient n-octanol/water (log value)**

-2.3098

· **Vapour pressure at 20 °C:**

0.00000267 hPa

· **Density and/or relative density**

· **Density at 20 °C:**

1.32 g/cm<sup>3</sup>

· **Relative density**

Not determined.

· **Bulk density:**

~840 kg/m<sup>3</sup>

· **Vapour density**

Not applicable.

· **9.2 Other information**

· **Appearance:**

· **Form:**

Crystalline powder

· **Important information on protection of health and environment, and on safety.**

· **Explosive properties:**

Product does not present an explosion hazard.

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- **Change in condition**
- **Evaporation rate** Not applicable.

· **Information with regard to physical hazard classes**

- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids** Void
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** Void
- **Desensitised explosives** Void

## SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Heating.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** oxidizing agent
- **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5

## SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:**  
Quantitative data on the toxicological effect of this product are not available.

· Components	Type	Value	Species
Oral	LD50	>5000 mg/kg (rat)	
Dermal	LD50	>5000 mg/kg (rat)	

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **After inhalation:** No irritant effect.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity**  
Based on available data, the classification criteria are not met.  
Based on available data, the classification criteria are not met.

· **Reproductive toxicity**

NOAEL (Fertility)	1000 mg/kg bw/day (rat)
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- Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.

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- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**

· **Repeated dose toxicity**

Oral	NOAEL	≥1000 mg/kg bw/day (rat)
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- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.

Type of test	Effective concentration	Method	Assessment
EC50/72 h	397 mg/l (Algae)		
EC50/48 h	>980 mg/l (daphnia magna)		
	980 mg/l (Aquatic Invertebrata)		
NOEC/72 h	100 mg/l (Algae)		
NOEC/96 h	>4000 mg/l (fish)		
NOEC (21 d)	3.99 mg/l (Aquatic Invertebrata)		

Type of test	Effective concentration	Method	Assessment
EC50/72 h	397 mg/l (Algae)		
EC50/48 h	>980 mg/l (daphnia magna)		
	980 mg/l (Aquatic Invertebrata)		
NOEC/72 h	100 mg/l (Algae)		
NOEC/96 h	>4000 mg/l (fish)		
NOEC (21 d)	3.99 mg/l (Aquatic Invertebrata)		

- **12.2 Persistence and degradability** Easily biodegradable
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**  
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**  
Do not allow product to reach ground water, water course or sewage system.  
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Chemicals must be disposed of in compliance with the respective national regulations.
- **Uncleaned packaging:**
- **Recommendation:**  
Disposal must be made according to official regulations.  
Packagings that may not be cleansed are to be disposed of in the same manner as the product.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

## SECTION 14: Transport information

- |  |      |
|--|------|
| · <b>14.1 UN number or ID number</b><br>· <b>ADR, ADN, IMDG, IATA</b>  | Void |
| · <b>14.2 UN proper shipping name</b><br>· <b>ADR, ADN, IMDG, IATA</b> | Void |

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· <b>14.3 Transport hazard class(es)</b>	
· <b>ADR, ADN, IMDG, IATA</b>	
· <b>Class</b>	Void
· <b>14.4 Packing group</b>	
· <b>ADR, IMDG, IATA</b>	Void
· <b>14.5 Environmental hazards:</b>	Not applicable.
· <b>14.6 Special precautions for user</b>	Not applicable.
· <b>14.7 Maritime transport in bulk according to IMO instruments</b>	Not applicable.
· <b>Transport/Additional information:</b>	Not dangerous according to the above specifications.
· <b>UN "Model Regulation":</b>	Void

## SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**  
Substance is not listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

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

- **Department issuing SDS:** Dept. Compliance
- **Date of previous version:** 04.02.2021
- **Version number of previous version:** 14.01
- **Abbreviations and acronyms:**  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
DNEL: Derived No-Effect Level (REACH)  
PNEC: Predicted No-Effect Concentration (REACH)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative
- **\* Data compared to the previous version altered.**

## Annex: Exposure scenario

- **Short title of the exposure scenario** Formulation and packing/repacking of substances and mixtures
- **Sector of Use**  
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites  
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

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- SU24 Scientific research and development
- **Product category**
  - PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
  - PC21 Laboratory chemicals
- **Process category**
  - PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
  - PROC15 Use as laboratory reagent
- **Environmental release category**
  - ERC2 Formulation into mixture
  - ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Solid
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** ≤ 1 tons per day
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure** No special measures required.
- **Other operational conditions affecting worker exposure**  
Avoid contact with eyes.  
Avoid contact with the skin.  
Indoor application.
- **Other operational conditions affecting consumer exposure**  
No special measures required.  
Not required.
- **Other operational conditions affecting consumer exposure during the use of the product**  
Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures** No special measures required.
- **Technical protective measures**  
Ensure that suitable extractors are available on processing machines
- **Personal protective measures**  
Do not inhale dust / smoke / mist.  
Avoid contact with the skin.  
Avoid contact with the eyes.  
Tightly sealed goggles  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation  
No special measures required.
- **Measures for consumer protection** Ensure adequate labelling.
- **Environmental protection measures**
- **Air** No special measures required.
- **Water** No special measures required.
- **Disposal measures** Ensure that waste is collected and contained.
- **Disposal procedures**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.  
Dispose of product residues with household waste.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.