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		Revised edition no : 0
		Date : 15 / 01 / 2018
		Supersedes : 31 / 7 / 2014
<h2 style="margin: 0;">Tris Ultra Pure</h2>		TRIS01, TRIS05, TRIS06

SECTION 1 Identification of the substance/mixture and of the company/undertaking
1.1. Product identifier

Identification of the product : Substance, Solid
Product code : TRIS01, TRIS05, TRIS06
Trade name : TRIS ULTRA PURE
Alternate Names : Tris-hydroxymethyl-aminomethane; Tris; Tris Amino; Tromethane; Trometamol; 2-Amino-2-(hydroxymethyl)-1, 3-propanediol
EC-No : 201-064-4
CAS number : 77-86-1
Formula : C₄H₁₁NO₃

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

1.2.1 Relevant identified uses : For research purposes only.
1.2.2 Uses advised against : No additional information available.

1.3. Details of the supplier of the safety data sheet

Company identification : Formedium Ltd.
 Unit 1B Hunstanton Commercial Park Norfolk PE365JQ
 Tel: +44(0)1485 609069
 Fax: +44(0)1485 600510
 E-mail: info@formedium.com

1.4. Emergency telephone number

Emergency telephone number : Tel: +44(0)1485 609069 (local time : 9.00 to 17.00)
 National Poison Information Centre :Europe UK : +44 0845 4647 (this service is only available to health professionals)
 See www.toxbase.org for a local poison centre

SECTION 2 Hazards identification
2.1. Classification of the substance or mixture
Classification according to Regulation (EC) 1272/2008

Not a hazardous substance or mixture.

2.2. Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

2.3. Other hazards

This product is not considered to be persistent, bioaccumulating nor toxic (PBT).

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SECTION 3 Composition / information on ingredients

3.1 Substance / Preparation

Name: Tris(hydroxymethyl)-aminomethane
CAS-No.: 000077-86-1
EC-No.: 201-064-4
Molecular weight g/mol: 121.14 g/mol
Structural formula: C₄H₁₁NO₃

Hazardous ingredients according to Regulation (EC) No. 1272/2008

Component:	Concentration	CAS No	EC No
Tris(hydroxymethyl)-aminomethane	100%	77-86-1	201-064-4

For the full text of the H-Statements mentioned in this Section, see section 16.

SECTION 4 First aid measures

4.1. Description of first aid measures

- First aid measures after inhalation :** If breathed in move person into fresh air. If not breathing give artificial respiration.
- First aid measures after skin contact :** Wash immediately with soap and plenty of water.
- First aid measures after eye contact :** Flush eyes with water as a precaution.
- First aid measures after ingestion :** Never give anything to an unconscious person. Rinse mouth out with water.

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

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

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

No additional information available.

SECTION 5 Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media Water spray, alcohol resistant foam, dry chemical powder or carbon dioxide (CO₂).

5.2. Special hazards arising from the substance or mixture

No data available.

5.3. Advice for firefighters

Protection during firefighting : Use self-contained breathing apparatus for fire fighting if necessary.

5.4. Further information

No data available.

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SECTION 6 Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2. Environmental precautions

Do not allow entry to drains or water courses.

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

For disposal see section 13.

SECTION 7 Handling and storage
7.1. Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see Section 2.2.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well ventilated place.

Hygroscopic.

7.3. Specific end use(s)

For research purposes only

SECTION 8 Exposure controls/personal protection
8.1. Control parameters

Components with workplace control parameters : Contains no substances with occupational exposure limit values.

8.1. Exposure controls

General industrial hygiene practice.

Personal protective equipment
Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Type	Material	Permeation	Thickness (mm)	Standard
Gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0.11	EN 374

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Section 8: Exposure controls / personal protection (continued)

Eye / face protection

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

Body protection

Choose body protection in relation to its type, the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dust are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Crystalline
Colour	Colourless to white
Odour	No data available
Odour Threshold	No data available
pH	10.5 - 12
Melting point	169 °C
Freezing point	No data available
Initial boiling point and boiling range	288 °C at 1.013 hPa – Decomposes below the boiling point.
Flash point	No data available
Relative evaporation rate	No data available
Flammability (solid,gas)	No data available
Vapour pressure	No data available
Relative vapour density at 20°C	No data available
Relative density	No data available
Water solubility	678 g/L at 20 °C
Partition coefficient : n-octanol / water	Log pow: 12.31 at 20°C
Auto-ignition temperature	The substance or mixture is not classified as self-heating
Decomposition temperature	No data available
Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

9.2. Other safety information

Bulk density	: 800 kg/m ³
Dissociation constant	: 8.22 at 25 °C

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SECTION 10 Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Hygroscopic

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Other decomposition products – no data available.
In the event of fire see Section 5

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity	LD50 Oral – Rat LD50 Dermal – Rat (OECD Test Guideline 402)	> 3000 mg/Kg > 5000 mg/Kg
Skin corrosion / irritation	Skin – Rabbit (OECD Test Guideline 404)	No skin irritation
Serious eye damage / eye irritation	Eyes – Rabbit (OECD Test Guideline 405)	No eye irritation
Respiratory or skin sensitisation	Buehler Test – Guinea pig (OECD Test Guideline 406)	No skin sensitisation
Germ cell mutagenicity	Not mutagenic in Ames Test. in vitro assay - Result: negative – in vitro tests did not show mutagenic effects. in vivo tests did not show any chromosomal changes.	
Carcogenicity IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.	
Reproductive toxicity	No data available.	
Specific target organ toxicity – single exposure	No data available.	
Specific target organ toxicity – repeated exposure	No data available.	
Aspiration hazard	No data available.	
Additional information	Repeated dose toxicity – rat – Oral – No observed adverse effect level – 1000 mg/Kg RTECS: TY2900000 To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.	

SECTION 12 Ecological information

12.1. Toxicity

Toxicity to daphnia and other aquatic invertebrates	: EC50 – Daphnia - > 980 mg/l – 48 h
Toxicity to algae	: EC50 – Algae – 397 mg/l – 72 h NOEC – Algae – 100 mg/l – 72 h

12.2. Persistence and degradability

Biodegradability	Result: - Readily biodegradable. (OECD Test Guideline 301F)
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12.3. Bioaccumulative potential

No bioaccumulation is to be expected (log Pow <= 4)

12.4. Mobility in soil

No data available.

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SECTION 12 Ecological information (continued)

12.5. Results of PBT and vPvB assessment.

This substance is not considered to be persistent, bioaccumulating or toxic (PBT).

12.6. Other adverse effects

No data available.

SECTION 13 Disposal considerations

13.1. Waste treatment methods

Product Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging Dispose of as unused product.

SECTION 14 Transport information

14.1. UN Number

Not applicable.

General information

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

14.2. UN Proper shipping name

Not applicable.

14.3. Transport Hazard Class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for user

No data available.

SECTION 15 Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of Regulation (EC) No. 2015/830.

15.2. Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16 Other information

Further information

: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Formedium Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product.

Revision

: Complete SDS revision

End of document