



# SAFETY DATA SHEET

[Required under safety and health regulations for shipping and handling]

Version: 2017  
Date Updated: August 2, 2017

## SECTION 1. ----- PRODUCT AND COMPANY IDENTIFICATION-----

**Product Name** Tris  
**Product Code(s)** TB0194/TB0195/TB0196/TB0197  
**Recommended Use** For Laboratory Research Use Only  
Not for Human or Animal Drug Use  
**Synonyms** Tris base, tris buffer, trizma, trizma base

**Supplier** Bio Basic Inc.  
**Address** 20 Konrad Crescent, Markham, Ontario,  
Canada, L3R 8T4  
**Telephone** (905) 474 4493  
**Fax** (905) 474 5794  
**For Chemical Emergency Phone#** (416) 995 9730

## SECTION 2. ----- HAZARDS IDENTIFICATION -----

### Emergency Overview

#### WHMIS Classification

Not WHMIS controlled.

Not a dangerous substance or mixture according to the Globally Harmonised System (GHS).

#### HMIS Classification

**Health hazard:** 0  
**Flammability:** 0  
**Physical hazards:** 0

#### Potential Health Effects

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.  
**Skin** May be harmful if absorbed through skin. May cause skin irritation.  
**Eyes** May cause eye irritation.  
**Ingestion** May be harmful if swallowed.

## SECTION 3. ----- COMPOSITION/INFORMATION ON INGREDIENTS -----

Chemical Name	EC No.	CAS-No	Weight %
Tris (hydroxymethyl) aminomethane	EEC No. 201-064-4	77-86-1	95-100

## SECTION 4. ----- FIRST-AID MEASURES-----

### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

### In case of skin contact

Wash off with soap and plenty of water.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water.

**SECTION 5. ----- FIRE FIGHTING MEASURES -----**

**Conditions of flammability**

Not flammable or combustible.

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

**Explosion data - sensitivity to mechanical impact**

no data available

**Explosion data - sensitivity to static discharge**

no data available

**SECTION 6. ----- ACCIDENTAL RELEASE MEASURES-----**

**Personal precautions**

Avoid dust formation. Avoid breathing vapours, mist or gas.

**Environmental precautions**

Do not let product enter drains.

**Methods and materials for containment and cleaning up**

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

**SECTION 7. ----- HANDLING AND STORAGE-----**

**Precautions for safe handling**

Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage**

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

Hygroscopic. Store under inert gas.

**SECTION 8. ----- EXPOSURE CONTROLS/PERSONAL PROTECTION-----**

**PROTECTION Personal protective equipment**

**Respiratory protection**

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand 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.

**Eye protection**

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

**Skin and body protection**

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

**Hygiene measures**

General industrial hygiene practice.

**Specific engineering controls**

Use mechanical exhaust or laboratory fumehood to avoid exposure.

**SECTION 9. ----- PHYSICAL AND CHEMICAL PROPERTIES -----****Appearance**

Form	crystalline
Colour	colourless white

**Safety data**

pH	10.5 - 12
Melting point/freezing point	Melting point/range: 169 °C (336 °F)
Boiling point	288 °C (550 °F) at 1,013 hPa (760 mmHg) - Decomposes below the boiling point.
Flash point	no data available
Ignition temperature	no data available
Auto-ignition temperature	The substance or mixture is not classified as self heating.
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	678 g/l at 20 °C (68 °F)
Partition coefficient: n-octanol/water	log Pow: -2.31 at 20 °C (68 °F)
Viscosity, kinematic	
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evapouration rate	no data available

**SECTION 10. -----STABILITY AND REACTIVITY -----****Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

hygroscopic

**Materials to avoid**

Strong oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx) Other decomposition products - no data available

**SECTION 11. ----- TOXICOLOGICAL INFORMATION -----**

**Acute toxicity**

**Oral LD50**

LD50 Oral - rat - > 3,000 mg/kg

**Inhalation LC50**

no data available

**Dermal LD50**

LD50 Dermal - rat - > 5,000 mg/kg

**Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

Skin - rabbit - No skin irritation - OECD Test Guideline 404

**Serious eye damage/eye irritation**

Eyes - rabbit - No eye irritation - OECD Test Guideline 405

**Respiratory or skin sensitisation**

Buehler Test - guinea pig - OECD Test Guideline 406 - Does not cause skin sensitisation.

**Germ cell mutagenicity**

Genotoxicity in vitro - Not mutagenic in Ames Test.

Genotoxicity in vitro - in vitro assay - negative

In vitro tests did not show mutagenic effects

Genotoxicity in vivo - In vivo tests did not show any chromosomal changes.

**Carcinogenicity**

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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Reproductive toxicity**

no data available

**Teratogenicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**Signs and Symptoms of Exposure**

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

**Synergistic effects**

no data available

**Additional Information**

Repeated dose toxicity - rat - Oral - No observed adverse effect level - 1,000 mg/kg

RTECS: TY2900000

**SECTION 12. ----- ECOLOGICAL INFORMATION -----**

**Toxicity**

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

**Persistence and degradability**

Biodegradability	Result: - Readily biodegradable. Method: OECD Test Guideline 301F
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**Bioaccumulative potential**

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

**Mobility in soil**

no data available

**PBT and vPvB assessment**

Results of PBT assessment	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
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**Other adverse effects**

no data available

**SECTION 13. ----- DISPOSAL CONSIDERATIONS -----**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

**SECTION 14. ----- TRANSPORT INFORMATION -----**

**DOT (US)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

**SECTION 15. ----- REGULATORY INFORMATION -----**

**WHMIS Classification**

Not WHMIS controlled.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**SECTION 16. ----- OTHER INFORMATION -----**

<b>Issuing Date</b>	13-Aug-2009
<b>Revision Date</b>	02-Aug-2017
<b>Revision Note</b>	No information available.
<b>Recommended Restrictions</b>	No information available

**Disclaimer**

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of SDS**



## CERTIFICATE OF ANALYSIS

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Product	Tris
Product Code	TB0196
Grade	Biotech
Formula	$C_4H_{11}NO_3$
MW	121.14
CAS#	77-86-1
Lot No	

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Test Items	Specifications	Results
Appearance	White crystalline Material	
Assay	$\geq 99.0\%$	
Solubility (40% W/V in water, @30°C)	Clear, Slightly yellow Solution	
Melting Point	168-172°C	
pH (5% W/V in water)	10.0-11.5	
Water	$\leq 0.5\%$	
UV abs A280nm, 40% aqueous solution	$\leq 0.07$	
UV abs A400nm, 40% aqueous solution	$\leq 0.02$	
Iron	$\leq 1\text{ppm}$	
Heavy Metals (as Pb)	$\leq 5\text{ppm}$	
Sulfate	$\leq 10\text{ppm}$	
Chloride	$\leq 3\text{ppm}$	
I.R.	Conforms to reference	

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Storage: Store at room temperature. Protect from moisture.