



Material Safety Data Sheet

VWR International

Product Name: TRIS Hydrochloride, Ultra Pure (TRIS(Hydroxymethyl)Aminomethane, Hydrochloride)	Revision Date: 06-Jan-2009
	Print Date No data available

VWR International encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name: TRIS Hydrochloride, Ultra Pure (TRIS(Hydroxymethyl)Aminomethane, Hydrochloride)

Company Identification: ANGUS Chemical Company
A Subsidiary of The Dow Chemical Company
1500 East Lake Cook Road
Buffalo Grove, IL 60089-0000
USA

For MSDS Updates and Product Information: 800-258-2436

Prepared By: Prepared for use in Canada by ANGUS EH&S
847-808-3432

Revision Date: 06-Jan-2009

Print Date: 06-Jan-2009

Customer Information Number: 800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400

Local Emergency Contact: 519-339-3711

2. Hazards Identification

Emergency Overview

Color White.
Physical State Solid.
Odor Odorless.
Hazards of Product

No significant hazards for emergency response are known.

Potential Health Effects

Eye Contact Solid or dust may cause irritation or corneal injury due to mechanical action.

* Indicates a trademark

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Skin Contact	Short single exposure not likely to cause significant skin irritation. Prolonged contact may cause slight skin irritation with local redness.
Skin Absorption	A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.
Inhalation	Vapors are unlikely due to physical properties. Dust may cause irritation to upper respiratory tract (nose and throat).
Ingestion	Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Effects of Repeated Exposure	No relevant information found
Cancer Information	No relevant information found
Birth Defects/Developmental Effects	No relevant information found
Reproductive Effects	No relevant information found

See Section 11 for additional Toxicological information.

3. Composition/information on ingredients

Chemical Name	CAS-No	Amount Weight %	H
Tris(hydroxymethyl)-aminomethane Hydrochloride	1185-53-1	99-100	-

Composition Notes:

4. First-aid Measures

Eye Contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist
Skin Contact	Wash skin with plenty of water.
Inhalation	Move person to fresh air; if effects occur, consult a physician.
Ingestion	No emergency medical treatment necessary.
Notes to Physician	No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.
Unsuitable Extinguishing Media	None known.
Fire Fighting Procedures	Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles.

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Special Protective Equipment for Firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards

Avoid dispersion of dust in air to reduce dust explosion hazard.

Hazardous Combustion Products

During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon Monoxide. Carbon Dioxide.

6. Accidental Release Measures

Steps To Be Taken If Material is Released or Spilled

Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions

Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

Good housekeeping and controlling of dusts are necessary for safe handling of product.

Storage

Keep container tightly closed in a dry and well-ventilated place. Do not store in: Zinc. Aluminum. Copper. Copper alloys. Galvanized iron. Galvanized steel.

8. Exposure Controls / Personal Protection

Exposure Guidelines

Consult local authorities for recommended exposure limits.

Chemical Name	ACGIH TLV	AIHA WEEL	OSHA PEL
Tris(hydroxymethyl)-aminomethane Hydrochloride	None established	None established	None established

Chemical Name	Ontario TWA	Quebec TWA	British Columbia
Tris(hydroxymethyl)-aminomethane Hydrochloride	None established	None established	None established

Personal Protection

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Eye/face Protection	Safety glasses should be sufficient for most operations; however, for dusty operations wear chemical goggles.
Skin Protection	Wear clean, body-covering clothing.
Respiratory Protection	For most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved particulate respirator.

Engineering Controls

Ventilation	Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.
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General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Physical State	Solid
Color	White
Odor	Odorless
pH	(1 molar aqueous solution) 3.5 -5.0
Flash Point	No data available
Flammability Limits in Air	Upper No data available Lower No data available
Autoignition Temperature	No data available
Boiling Point/Range	No data available
Melting Point/Range	302°F; 150°C
Vapor Pressure	Nil
Vapor Density (air = 1)	No data available
Specific Gravity (water = 1)	No data available
Density	No data available
Bulk Density	52 lb/ft ³ ; 833 kg/m ³
Water Solubility	100 g/L
Partition Coefficient (n-octanol/water)	log Pow = - 2.31
Molecular Weight	157.6
Molecular Formula	C ₄ H ₁₁ N·O ₃ ·HCl

10. Stability and Reactivity

Stability/Instability	Stable under recommended storage conditions.
Conditions to Avoid	Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Avoid contact with: Strong acids. Strong oxidizers. Avoid unintended contact with: Halogenated hydrocarbons.
Hazardous Polymerization	Will not occur.
Thermal Decomposition	Hazardous decomposition products depend on temperature, air supply, and the presence of other materials. Toxic flammable gases are released during decomposition. Decomposition products can include and are not limited to: Carbon oxides. Nitrogen oxides (NO _x). HCl gas.

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11. Toxicological Information

BASED ON DATA FOR SIMILAR MATERIAL(S).

Acute Toxicity

Product Information

LD50 Oral:	5900mg/kg (Rat)
LD50 Dermal:	The single dose dermal LD50 has not been determined
LC50 Inhalation (Dust):	The acute inhalation LC50 has not been determined

Effects of Repeated Exposure	No relevant information found
Cancer Information	No relevant information found
Birth Defects/Developmental Effects	No relevant information found
Reproductive Effects	No relevant information found
Genetic Toxicology	No relevant information found

12. Ecological Information

BASED ON DATA FOR SIMILAR MATERIAL(S).

Movement and Partitioning	Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Potential for mobility in soil is very high (Koc between 0 and 50).
Henry's Constant	8.67E-13 atm*m3/mole @ 25C
Persistence and Degradability	Material is expected to be readily biodegradable.
Ecotoxicity	Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested.
Partition Coefficient (n-octanol/water)	log Pow = - 2.31

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. VWR International HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 3: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Landfill. Incinerator or other thermal destruction device. As a service to its customers, VWR INTERNATIONAL can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone the Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details

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14. Transport Information

DOT Non-Bulk Not regulated

DOT Bulk Not regulated

TDG Not regulated

ICAO Not regulated

IATA Not regulated

IMDG/IMO Not regulated

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material

15. Regulatory Information

U.S.A. TSCA

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

CEPA - Domestic Substances List (DSL)

All substances in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

Australian AICS

All components of this product are listed on the Australian AICS Inventory or are not required to be listed.

Chinese SEPA

All components of this product are listed on the Chinese SEPA Inventory or are not required to be listed.

Japanese METI

All components of this product are listed on the Japanese METI Inventory or are not required to be listed.

Korean TCCL

All components of this product are listed on the Korean TCCL Inventory or are not required to be listed.

Philippines PICCS

This product contains one or more substances which are not listed on the Philippines PICCS Inventory. Please contact VWR International for further information.

Canada

Hazardous Products Act Information: CPR Compliance

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

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Canadian Workplace Hazardous Materials Information System (WHMIS) Classification:

This product is not a "Controlled Product" under WHMIS.

16. Other Information

Recommended Uses and Restrictions:

For laboratory use. VWR International recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact the Customer Information Group (See Section 1 of this data sheet).

Hazard Rating System:

NFPA

Health 0

Flammability 1

Reactivity 0

Prepared By:

ANGUS Chemical Company

Revision Date:

06-Jan-2009

Revision Summary:

Revision SDS/MSDS.

VWR International urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that its activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version..

End of MSDS