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Revision Number 2

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

**Product Name** 1M Tris, pH 8.0  
**Product Code(s)** E199  
**Recommended Use** For Further Manufacturing Use Only  
Not for Human or Animal Drug Use

**Company**  
AMRESKO, LLC  
6681 Cochran Road  
Solon, Ohio 44139

**Emergency Telephone Number** Chemtrec 1-800-424-9300

**Company Phone Number** 1-800-448-4442  
**E-mail Address** info@amresco-inc.com

## 2. HAZARDS IDENTIFICATION

### GHS - Classification

**Classification** Skin Irritant 2 Eye Irritant 2

**Signal Word** Warning



**Hazard Statements** H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation

**Precautionary Statements** P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P302+ P352 - IF ON SKIN: Wash with plenty of soap and water P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	EC No.	REACH Reg. No.	CAS-No	Weight %	Classification
Tris hydroxymethyl aminomethane	EEC No. 201-064-4	Not available	77-86-1	10-14	-
Hydrogen chloride	EEC No. 231-595-7	Not available	7647-01-0	1-5	Xi;R37 C;R34

### 4. FIRST AID MEASURES

<b>Eye Contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
<b>Inhalation</b>	Move to fresh air. If breathing becomes difficult, give oxygen.
<b>Ingestion</b>	Clean mouth with water and afterwards drink plenty of water.
<b>Notes to Physician</b>	Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

<b>Flammable Properties</b>	Not flammable.
<b>Flash Point</b>	Not determined
<b>Suitable Extinguishing Media</b>	Dry chemical, CO2, water spray or regular foam.
<b>Hazardous Combustion Products</b>	Carbon oxides, Nitrogen oxides (NOx).
<b>Explosion Data</b>	
<b>Sensitivity to Mechanical Impact</b>	Not sensitive.
<b>Sensitivity to Static Discharge</b>	Not sensitive.
<b>Protective Equipment and Precautions for Firefighters</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation.
<b>Methods for Containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for Cleaning Up</b>	Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

### 7. HANDLING AND STORAGE

<b>Handling</b>	Handle in accordance with good industrial hygiene and safety practice.
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**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Incompatible Products** Bases. Oxidizing agents.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen chloride 7647-01-0			IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m <sup>3</sup>

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems.

### Personal Protective Equipment

**Eye/Face Protection** Tightly fitting safety goggles.

**Skin and Body Protection** Wear protective gloves/clothing.

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear and Colorless	
<b>Odor</b>	No information available	
<b>Odor Threshold</b>	No information available	
<b>Decomposition Temperature °C</b>	No information available	
<b>Freezing Point</b>	No information available	
<b>Initial Boiling Point</b>	No information available	
<b>Physical State</b>	Liquid	
<b>pH</b>	No data available	
<b>Flash Point</b>	Not determined	
<b>Autoignition Temperature</b>	No data available	
<b>Boiling Point/Range</b>	No data available	
<b>Melting Point/Range</b>	No data available	
<b>Flammability Limits in Air</b>	<b>Upper</b> No data available	<b>Lower</b> No data available
<b>Explosive Properties</b>	No information available	
<b>Oxidizing Properties</b>	No information available	
<b>Evaporation Rate</b>	No data available	
<b>MMHG @ 37.8 C</b>	No data available	
<b>Vapor Density</b>	No data available	
<b>Specific Gravity</b>	No data available	
<b>Solubility</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>	No data available	
<b>Viscosity</b>	No information available	

## 10. STABILITY AND REACTIVITY

**Stability** Stable under recommended storage conditions.

**Incompatible Products** Bases. Oxidizing agents.

**Conditions to Avoid** None known based on information supplied.

**Hazardous Decomposition Products** Carbon oxides. Nitrogen oxides (NOx).

**Hazardous Polymerization** Hazardous polymerization does not occur.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

**Product Information** Irritating to eye, skin and respiratory system. May be harmful if swallowed.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Tris hydroxymethyl aminomethane	5900 mg/kg ( Rat )		
Hydrogen chloride	700 mg/kg ( Rat )	5010 mg/kg ( Rabbit )	3124 ppm ( Rat ) 1 h

### Chronic Toxicity

**Chronic Toxicity** No known effect based on information supplied.

**Target Organ Effects** None known.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Hydrogen chloride		LC50= 282 mg/L Gambusia affinis 96 h		

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method** Dispose of material in accordance with all federal, state, and local regulations.

**Contaminated Packaging** Dispose of in accordance with all federal, state and local regulations.

## 14. TRANSPORT INFORMATION

**IATA** Not regulated

**DOT** Not regulated

## 15. REGULATORY INFORMATION

**REACH Title VII Restrictions** No information available.

Chemical Name	Dangerous Substances	Organic Solvents	Harmful Substances Whose Names Are to be Indicated on the Label	Pollution Release and Transfer Registry (Class II):	Pollution Release and Transfer Registry (Class I):	Poison and Deleterious Substances Control Law:
Tris hydroxymethyl aminomethane	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Hydrogen chloride	>=>=0.1 % weight	Not applicable	Not applicable	Not applicable	Not applicable	Deleterious
Component	ISHA - Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA - Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) - Toxic Chemicals	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II	
Tris hydroxymethyl aminomethane 77-86-1 ( 10-14 )	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	
Hydrogen chloride 7647-01-0 ( 1-5 )	Not applicable	Not applicable	97-1-203, 10 % or more in mixtures	Not applicable	>= 1.0 %	

### International Inventories

TSCA	Does not Comply
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Does not Comply
KECL	Does not Comply
PICCS	Does not Comply
AICS	Does not Comply

### U.S. Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Hydrogen chloride	7647-01-0	1-5	1.0

#### SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrogen chloride 7647-01-0 ( 1-5 )	5000 lb			X

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPS) (see 40 CFR 61)**

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:.

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Hydrogen chloride	7647-01-0	1-5	Present			

**CERCLA**

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Hydrogen chloride	5000 lb	5000 lb

**U.S. State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Hydrogen chloride	X	X	X	X	X

**International Regulations**

**Mexico - Grade** No information available.

**Canada**

**WHMIS Hazard Class**

D2B Toxic materials



Chemical Name	NPRI
Hydrogen chloride	X

**16. OTHER INFORMATION**

**Issuing Date** 23-Jun-2010

**Revision Date** 11-Sep-2012

**Revision Note**  
No information available

**Recommended Restrictions** No information available

**Disclaimer**

The information provided on this MSDS 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 MSDS**