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MATERIAL SAFETY DATA SHEET:  
TRIS (HYDROXYMETHYL) AMINOMETHANE  
CATALOG NUMBER: AB02000

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#### SECTION I – PRODUCT INFORMATION

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PRODUCT: TRIS  
GRADE: ULTRA PURE  
SYNONYMS: TRIS, THAM, TROMETHAMINE; TRIS BASE; TRIZMA BASE; TRIS, FREE BASE;  
TROMETHANE; TRIS BUFFER; 2-AMINO-2-HYDROXYMETHYLPROPANEDIOL; TRIZMA;  
TROMETAMOL; TRIS (HYDROXYMETHYL)METHYLAMINE  
CAS NUMBER: 77-86-1  
MOLECULAR FORMULA: C<sub>4</sub>H<sub>11</sub>NO<sub>3</sub>  
MOLECULAR WEIGHT: 121.14

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#### SECTION II – COMPOSITION/INFORMATION ON COMPONENTS

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TRIS

CAS NUMBER: 77-86-1

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#### SECTION III – HAZARDS IDENTIFICATION

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WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES,  
AND RESPIRATORY TRACT.

POTENTIAL HEALTH EFFECTS:

SKIN CONTACT: CAUSES IRRITATION TO SKIN. SYMPTOMS INCLUDE REDNESS, ITCHING  
AND PAIN.

INGESTION: MILD ALKALI. CAUSES IRRITATION AND REDDENING TO THE MUCOUS  
MEMBRANES OF THE MOUTH, ESOPHAGUS AND GASTROINTESTINAL TRACT. SYMPTOMS  
MAY INCLUDE NAUSEA, VOMITING AND DIARRHEA. CLOTTING AND COMA. ESTIMATED  
LETHAL DOSE: 50 GRAMS.

INHALATION: CAUSES IRRITATION TO THE RESPIRATORY TRACT. SYMPTOMS MAY  
INCLUDE COUGHING AND SHORTNESS OF BREATH.

EYE CONTACT: CAUSES IRRITATION, REDNESS AND PAIN.

CHRONIC EXPOSURE: CHRONIC DERMATITIS MAY FOLLOW SKIN CONTACT.

AGGRAVATION OF PRE-EXISTING CONDITIONS: NO INFORMATION FOUND.

HEALTH RATING: 1 – SLIGHT

FLAMMABILITY RATING: 1 – SLIGHT

REACTIVITY RATING: 1 1 – SLIGHT

CONTACT RATING: 2 – MODERATE

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#### SECTION IV – FIRST AID MEASURES

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SKIN CONTACT: IMMEDIATELY FLUSH SKIN WITH PLENTY OF SOAP AND WATER FOR AT  
LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. SEEK MEDICAL  
ATTENTION. WASH CLOTHING BEFORE USE. THOROUGHLY CLEAN SHOES BEFORE REUSE.

INGESTION: INDUCE VOMITTING IMMEDIATELY AS DIRECTED BY MEDICAL PERSONNEL. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION.

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK MEDICAL ATTENTION.

EYE CONTACT: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, LIFTING UPPER AND LOWER EYELIDS OCCASIONALLY. SEEK MEDICAL ATTENTION.

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#### SECTION V – FIRE FIGHTING MEASURES

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FIRE: AS WITH MOST ORGANIC SOLIDS, FIRE IS POSSIBLE AT ELEVATED TEMPERATURES OR BY CONTACT WITH AN IGNITION SOURCE. SLIGHT FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

EXPLOSION: NOT CONSIDERED TO BE AN EXPLOSION HAZARD.

FIRE EXTINGUISHING MEDIA: WATER SPRAY, DRY CHEMICAL, ALCOHOL FOAM OR CARBON DIOXIDE.

SPECIAL INFORMATION: IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE.

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#### SECTION VI – ACCIDENTAL RELEASE MEASURES

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GENERAL: REMOVE ALL SOURCES OF IGNITION. VENTILATE AREA OF LEAK OR SPILL.

WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AS SPECIFIED IN SECTION VIII.

SPILLS: PICK UP AND PLACE IN A SUITABLE CONTAINER FOR RECLAMATION OR DISPOSAL, USING A METHOD THAT DOES NOT GENERATE DUST.

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#### SECTION VII – HANDLING AND STORAGE

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KEEP IN A TIGHTLY CLOSED CONTAINER, STORED IN A COOL, DRY, VENTILATED AREA.

PROTECT AGAINST PHYSICAL DAMAGE. ISOLATE FROM ANY SOURCE OF HEAT OR IGNITION. ISOLATE FROM OXIDIZING MATERIALS. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESIDUES (DUST, SOLIDS) OBSERVE ALL WARNINGS AND PRECAUTIONS LISTED FOR THE PRODUCT.

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#### SECTION VIII – EXPOSURE CONTROLS / PERSONAL PROTECTION

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AIRBORNE EXPOSURE LIMITS: NONE ESTABLISHED

VENTILATION SYSTEM: A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES AS LOW AS POSSIBLE. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF THE CONTAMINANT AT ITS SOURCE, PREVENTING DISPERSION OF IT INTO THE GENERAL WORK AREA.

RESPIRATORS: FOR CONDITIONS OF USE WHERE EXPOSURE TO THE DUST OR MIST IS APPARENT, A HALF-FACE DUST/MIST RESPIRATOR MAY BE WORN. FOR EMERGENCIES OR INSTANCES WHERE THE EXPOSURE LEVELS ARE NOT KNOWN, USE A FULL-FACE, POSITIVE PRESSURE, AIR SUPPLIED RESPIRATOR. WARNING: AIR PURIFYING RESPIRATORS DO NOT PROTECT WORKERS IN OXYGEN-DEFICIENT ATMOSPHERES.

EYE PROTECTION: USE CHEMICAL SAFETY GOGGLES AND/OR FULL FACE SHIELD WHERE DUSTING OR SPLASHING OF SOLUTION IS POSSIBLE. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

SKIN PROTECTION: WEAR PROTECTIVE GLOVES AND CLEAN BODY-COVERING CLOTHING.

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#### SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE: TRANSPARENT, COLORLESS CRYSTALS

ODOR: SLIGHT CHARACTERISTIC ODOR.

BOILING POINT: 426°F – 428°F (219°C – 220°C)  
PH: 10.4  
SOLUBILITY: 550MG/ML  
MELTING POINT: 340°F – 342°F (171°C – 172°C)  
EVAPORATION RATE: NO INFORMATION FOUND.  
% VOLATILES BY VOLUME AT 21°C (70°F): 0  
MOLECULAR FORMULA: C4H11NO3  
MOLECULAR WEIGHT: 121.136

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SECTION X – STABILITY AND REACTIVITY

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CHEMICAL STABILITY: STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE  
CONDITIONS TO AVOID: HEAT, INCOMPATIBILITIES.  
INCOMPATIBILITIES WITH OTHER MATERIALS:  
COPPER, BRASS, ALUMINUM AND OXIDIZING AGENTS  
HAZARDOUS DECOMPOSITION PRODUCTS: BURNING MAY PRODUCE CARBON MONOXIDE,  
CARBON DIOXIDE OR NITROGEN OXIDES.  
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

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SECTION XI – TOXICOLOGICAL INFORMATION

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ORAL RAT LD50: 5900 MG/KG

INGREDIENT:	NTP CARCINOGEN		IARC CATEGORY
	KNOWN	ANTICIPATED	
TRIS (77-86-1)	NO	NO	NONE

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SECTION XII – DISPOSAL CONSIDERATIONS

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WHATEVER CANNOT BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE MANGED IN AN APPROPRIATE AND APPROVED WASTE DISPOSAL FACILITY. PROCESSING, USE OF CONTAMINATION OF THIS PRODUCT MAY CHANGE THE WASTE MANAGEMENT OPTIONS. STATE AND LOCAL DISPOSAL REGULATIONS MAY DIFFER FROM FEDERAL DISPOSAL REGULATIONS.

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SECTION XIII – TRANSPORT INFORMATION

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NOT REGULATED.

REVISION DATE 12/14/09