TRIS (BASE)

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: TRIS (BASE)
COMMON SYNONYMS: TRIS (HYDROXYMETHYL) AMINOMETHANE; TRIS AMINE; TROMETHAMINE; THAM
CHEMICAL FAMILY: AMINE ALCOHOLS
FORMULA: \( \text{NH}_2\text{C(CH}_3\text{O)}_3 \)
FORMULA WT.: 121.14
CAS NO.: 77-86-1
OSHA/ATEC NO.: TY2900000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: 4139, 4092, X171, X188, 4099, X167

PRECAUTIONARY LABELING

BAKER SAF-T-DATA® SYSTEM

HEALTH - 1 SLIGHT
FLAMMABILITY - 1 SLIGHT
REACTIVITY - 1 SLIGHT
CONTACT - 2 MODERATE

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT

U.S. PRECAUTIONARY LABELING

WARNING
HARMFUL IF SWALLOWED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AVOID CONTACT WITH EYES, SKIN, CLOTHING. AVOID BREATHING DUST. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

INTERNATIONAL LABELING

AVOID CONTACT WITH EYES. AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF WATER. KEEP CONTAINER TIGHTLY CLOSED.

SAF-T-DATA® STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

CONTINUED ON PAGE: 2
TRIS (BASE)

SECTION II - COMPONENTS

COMPONENT
TRIS (HYDROXYMETHYLAMINOMETHANE) 77-86-1

GAS NO. 77-86-1
WEIGHT % 90-100
OSHA/REL N/E
ACGIH/TLV N/E

SECTION III - PHYSICAL DATA

BOILING POINT: 219 C (426 F)
VAPOR PRESSURE (MMHG): N/A
(AT 760 MM HG)

MELTING POINT: 171 C (339 F)
VAPOR DENSITY (AIR=1): N/A
(AT 760 MM HG)
EVAPORATION RATE: N/A
SPECIFIC GRAVITY: N/A
(% VOLATILES BY VOLUME: 0
(H2O=1))
PH: N/A

SPECIFIC GRAVITY: N/A
ODOR THRESHOLD (P.P.M.): N/A

COEFFICIENT WATER/OIL DISTRIBUTION: N/A
APPEARANCE & ODOR: WHITE CRYSTALLINE SOLID; ODORLESS.

PHYSICAL STATE: SOLID

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP): N/A
NFPA 704M RATING: 1-1-0
AUTOIGNITION TEMPERATURE: N/A

FLAMMABLE LIMITS: UPPER - N/A
LOWER - N/A

FIRE EXTINGUISHING MEDIA
USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

SPECIAL FIRE-FIGHTING PROCEDURES
FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE.

CONTINUED ON PAGE: 3
UNUSUAL FIRE & EXPLOSION HAZARDS
NONE IDENTIFIED.

TOXIC GASES PRODUCED
CARBON MONOXIDE, CARBON DIOXIDE, OXIDES OF NITROGEN

EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT
NONE IDENTIFIED.

EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE
NONE IDENTIFIED.

THRESHOLD LIMIT VALUE (TLV/TWA): NOT ESTABLISHED
SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED
PERMISSIBLE EXPOSURE LIMIT (PEL): NOT ESTABLISHED

TOXICITY OF COMPONENTS

ORAL RAT LD50 FOR TRIS(HYDROXYMETHYL)AMINOMETHANE 5900 MG/KG
INTRAVENOUS MOUSE LD50 FOR TRIS(HYDROXYMETHYL)AMINOMETHANE 1210 MG/KG

CARCINOGENICITY: NTP: NO  IARC: NO  Z LIST: NO  OSHA REG: NO

CARCINOGENICITY
NONE IDENTIFIED.

REPRODUCTIVE EFFECTS
NONE IDENTIFIED.

EFFECTS OF OVEREXPOSURE

INHALATION: SEVERE IRRITATION OR BURNS OF MUCOUS MEMBRANES, TIGHTNESS AND PAIN IN CHEST, COUGHING, DIFFICULT BREATHING

SKIN CONTACT: PROLONGED CONTACT MAY CAUSE SKIN SENSITIZATION

CONTINUED ON PAGE: 4
SECTION V - HEALTH HAZARD DATA (CONTINUED)

EYE CONTACT: IRITATION

SKIN ABSORPTION: NONE IDENTIFIED

INGESTION: IRRITATION AND BURNS TO MOUTH AND STOMACH, GASTROINTESTINAL IRRITATION

CHRONIC EFFECTS: NONE IDENTIFIED

TARGET ORGANS
NONE IDENTIFIED

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
NONE IDENTIFIED

PRIMARY ROUTES OF ENTRY
INHALATION, INGESTION, SKIN CONTACT, EYE CONTACT

EMERGENCY AND FIRST AID PROCEDURES

INGESTION: CALL A PHYSICIAN. IF-swallowed, IF CONSCIOUS, GIVE LARGE AMOUNTS OF WATER, INDUCE VOMITING.

INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. PROMPT ACTION IS ESSENTIAL.

SKIN CONTACT: IN CASE OF CONTACT, FLUSH SKIN WITH WATER.

EYE CONTACT: IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

ACUTE: NO CHRONIC: NO FLAMMABILITY: NO PRESSURE: NO REACTIVITY: NO

EXTREMELY HAZARDOUS SUBSTANCE: NO
CERCLA HAZARDOUS SUBSTANCE: NO
SARA 313 TOXIC CHEMICALS: NO
TSCA INVENTORY: YES

CONTINUED ON PAGE: 5
SECTION VI - REACTIVITY DATA

STABILITY: STABLE
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: NONE DOCUMENTED

INCOMPATIBILITIES: STRONG OXIDIZING AGENTS, COPPER, BRASS, BRONZE, ALUMINUM

DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE, OXIDES OF NITROGEN

SECTION VII - SPILL & DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE
Wear self-contained breathing apparatus and full protective clothing, with clean shovel, carefully place material into clean, dry container and cover; remove from area, flush spill area with water.

DISPOSAL PROCEDURE
Dispose in accordance with all applicable federal, state, and local environmental regulations.

SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT

VENTILATION:
Use adequate general or local exhaust ventilation to keep fume or dust levels as low as possible.

RESPIRATORY PROTECTION:
None required where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask.

EYE/SKIN PROTECTION:
Safety goggles, proper gloves are recommended.

SECTION IX - STORAGE AND HANDLING PRECAUTIONS

SAF-T-OATA™ STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

STORAGE REQUIREMENTS
Keep container tightly closed. Suitable for any general chemical storage area.

CONTINUED ON PAGE: 5
SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (O.O.T.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)

MARINE POLLUTANTS: NO

AIR (I.C.A.O.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)

U.S. CUSTOMS HARMONIZATION NUMBER: 29055000001

NOTE: WHEN HANDLING LIQUID PRODUCTS, SECONDARY PROTECTIVE CONTAINERS MUST BE USED FOR CARRYING.

-N/A = NOT APPLICABLE, OR NOT AVAILABLE; -N/E = NOT ESTABLISHED

MALLINCKRODT BAKER PROVIDES THE INFORMATION CONTAINED HEREIN IN GOOD FAITH BUT MAKES NO REPRESENTATION AS TO ITS COMPREHENSIVENESS OR ACCURACY. THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT. INDIVIDUALS RECEIVING THE INFORMATION MUST EXERCISE THEIR INDEPENDENT JUDGMENT IN DETERMINING ITS APPROPRIATENESS FOR A PARTICULAR PURPOSE. MALLINCKRODT BAKER MAKES NO REPRESENTATIONS, OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

NOTE: CHEMTREC, CAMUC, AND NATIONAL RESPONSE CENTER EMERGENCY TELEPHONE NUMBERS ARE TO BE USED ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS. ALL NON-EMERGENCY QUESTIONS SHOULD BE DIRECTED TO CUSTOMER SERVICE (1-800-JTBAKER) FOR ASSISTANCE.

COPYRIGHT 1995 MALLINCKRODT BAKER, INC.

TRADEMARKS OF MALLINCKRODT BAKER, INC.

APPROVED BY QUALITY ASSURANCE DEPARTMENT.

-- LAST PAGE --

"ISSUED BY VWR 07/30/96"