

J.T. BAKER INC., 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865

M A T E R I A L S A F E T Y D A T A S H E E T

24-HOUR EMERGENCY TELEPHONE -- (908) 859-2151

CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

T7111 -03

TRIS (BASE)

PAGE: 1

EFFECTIVE: 03/22/96

ISSUED: 03/26/96

MALLINCKRODT BAKER, INC., 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865

 =====
 SECTION I - PRODUCT IDENTIFICATION
 =====

PRODUCT NAME: TRIS (BASE)
 COMMON SYNONYMS: TRIS (HYDROXYMETHYL) AMINOMETHANE; TRISAMINE; TROMETHAMINE; THAM
 CHEMICAL FAMILY: AMINE ALCOHOLS
 FORMULA: $\text{NH}_2\text{C}(\text{CH}_2\text{OH})_3$
 FORMULA WT.: 121.14
 CAS NO.: 77-86-1
 NIOSH/RTECS NO.: TY2900000
 PRODUCT USE: LABORATORY REAGENT
 PRODUCT CODES: 4109, 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

T7111 -03 TRIS (BASE) PAGE: 2
EFFECTIVE: 03/22/96 ISSUED: 03/26/96

=====
SECTION II - COMPONENTS
=====

COMPONENT	CAS NO.	WEIGHT %	OSHA/PEL	ACGIH/TLV
TRIS(HYDROXYMETHYL)AMINOMETHANE	77-86-1	99-100	N/E	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)

SPECIFIC GRAVITY: N/A EVAPORATION RATE: N/A
(H2O=1)

SOLUBILITY(H2O): APPRECIABLE (>10%) % VOLATILES BY VOLUME: 0
(21 C)

PH: N/A

ODOR THRESHOLD (P.P.M.): N/A PHYSICAL STATE: SOLID

COEFFICIENT WATER/OIL DISTRIBUTION: N/A

APPEARANCE & ODOR: WHITE CRYSTALLINE SOLID. ODDRLESS.

=====
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

T7111 -03
EFFECTIVE: 03/22/96

TRIS (BASE)

PAGE: 3
ISSUED: 03/26/96

=====

SECTION IV - FIRE AND EXPLOSION HAZARD DATA (CONTINUED)

=====

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.

=====

SECTION V - HEALTH HAZARD DATA

=====

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 MUCCOUS MEMBRANES, TIGHTNESS
AND PAIN IN CHEST, COUGHING, DIFFICULT BREATHING

SKIN CONTACT: PROLONGED CONTACT MAY CAUSE SKIN SENSITIZATION

CONTINUED ON PAGE: 4

T7111 -03
EFFECTIVE: 03/22/96

TRIS (BASE)

PAGE: 4
ISSUED: 03/26/96

=====

SECTION V - HEALTH HAZARD DATA (CONTINUED)

=====

EYE CONTACT: IRRITATION

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

T7111 -03
EFFECTIVE: 03/22/96

TRIS (BASE)

PAGE: 6
ISSUED: 03/26/96

=====
SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION
=====

DOMESTIC (D.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, CANUTEC 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 1996 MALLINCKRODT BAKER, INC.
*TRADEMARKS OF MALLINCKRODT BAKER, INC.
APPROVED BY QUALITY ASSURANCE DEPARTMENT.