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TRIS(HYDROXYMETHYL) AMINOMETHANE HYDROCHLORIDE
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MATERIAL SAFETY DATA SHEET

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SUBSTANCE IDENTIFICATION

SUBSTANCE: **TRIS(HYDROXYMETHYL) AMINOMETHANE HYDROCHLORIDE**
CAS-NUMBER 1185-53-1

TRADE NAMES/SYNONYMS:
TRIZMA HYDROCHLORIDE; O-4997; BP153;
1,3-PROPANEDIOL, 2-AMINO-2-(HYDROXYMETHYL)-, HYDROCHLORIDE;
2-AMINO-2-(HYDROXYMETHYL)-1,3-PROPANEDIOL, HYDROCHLORIDE; TRIS CHLORIDE;
TRIS HYDROCHLORIDE; TROMETHAMINE HYDROCHLORIDE;
TRIS(HYDROXYMETHYL) AMINOMETHANE; C4H12CLNO3; ACC60680

CHEMICAL FAMILY:
AMINE, ALIPHATIC

SALT

MOLECULAR FORMULA: N-H2-C(C-H2-O-H)3.H-CL

MOLECULAR WEIGHT: 157.60

CERCLA RATINGS (SCALE 0-3): HEALTH=U FIRE=1 REACTIVITY=0 PERSISTENCE=0
NFPA RATINGS (SCALE 0-4): HEALTH=U FIRE=1 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: TRIS(HYDROXYMETHYL) AMINOMETHANE HYDROCHLORIDE PERCENT: 100.0
CAS# 1185-53-1

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:
NO OCCUPATIONAL EXPOSURE LIMITS ESTABLISHED BY OSHA, ACGIH, OR NIOSH.

PHYSICAL DATA

DESCRIPTION: ODORLESS, CLEAR TO WHITE, HYGROSCOPIC CRYSTALS OR CRYSTALLINE

POWDER. MELTING POINT: 302-306 F (150-152 C) DECOMPOSES

SPECIFIC GRAVITY: NOT AVAILABLE VOLATILITY: 0% @ 21C

SOLUBILITY IN WATER: SOLUBLE

OTHER PHYSICAL DATA: 40%(W/W) SOLUTION IS CLEAR AND COLORLESS.
PH= 3.5-5.5 (0.5M IN WATER @ 21 C)

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
SLIGHT FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

DUST-AIR MIXTURES MAY IGNITE OR EXPLODE.

FIREFIGHTING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR REGULAR FOAM
(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR REGULAR FOAM
(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FIREFIGHTING:
MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK. DO NOT SCATTER
SPILLED MATERIAL WITH HIGH-PRESSURE WATER STREAMS. DIKE FIRE-CONTROL WATER FOR
LATER DISPOSAL (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5, GUIDE

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USE AGENTS SUITABLE FOR TYPE OF SURROUNDING FIRE. AVOID BREATHING HAZARDOUS VAPORS, KEEP UPWIND.

TOXICITY

TRIS(HYDROXYMETHYL) AMINOMETHANE HYDROCHLORIDE:
CARCINOGEN STATUS: NONE.
ACUTE TOXICITY LEVEL: NO DATA AVAILABLE.
TARGET EFFECTS: NO DATA AVAILABLE.

HEALTH EFFECTS AND FIRST AID

INHALATION:
TRIS(HYDROXYMETHYL) AMINOMETHANE HYDROCHLORIDE:
ACUTE EXPOSURE- NO SPECIFIC INFORMATION AVAILABLE BASED ON INFORMATION
ON TRIS(HYDROXYMETHYL) AMINOMETHANE, MAY CAUSE IRRITATION OF THE MUCOUS
MEMBRANES WITH TIGHTNESS AND PAIN IN THE CHEST, COUGHING, AND DIFFICULTY
BREATHING.
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING
HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST.
TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:
TRIS(HYDROXYMETHYL) AMINOMETHANE HYDROCHLORIDE:
ACUTE EXPOSURE- NO SPECIFIC INFORMATION AVAILABLE BASED ON INFORMATION ON
TRIS(HYDROXYMETHYL) AMINOMETHANE, MAY CAUSE IRRITATION WITH REDNESS, PAIN,
AND POSSIBLY SENSITIZATION.
CHRONIC EXPOSURE- NO SPECIFIC INFORMATION AVAILABLE BASED ON INFORMATION
ON TRIS(HYDROXYMETHYL) AMINOMETHANE, MAY CAUSE DERMATITIS DUE TO
IRRITATION OR SENSITIZATION. MICE USED IN A LONG-TERM EXPOSURE STUDY
DEVELOPED BENIGN AND MALIGNANT TUMORS OF THE SKIN, FORESTOMACH, AND ORAL
CAVITY. PAPILLARY TUMORS OF THE LUNG WERE OBSERVED, AND A TUBULAR ADENOMA
OF THE KIDNEY WAS OBSERVED IN ONE MOUSE.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED
AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO
EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL
ATTENTION IMMEDIATELY.

EYE CONTACT:
TRIS(HYDROXYMETHYL) AMINOMETHANE HYDROCHLORIDE:
ACUTE EXPOSURE- MAY CAUSE IRRITATION.
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE,
OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL
REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:
TRIS(HYDROXYMETHYL) AMINOMETHANE HYDROCHLORIDE:
ACUTE EXPOSURE- NO SPECIFIC INFORMATION AVAILABLE BASED ON INFORMATION ON
TRIS(HYDROXYMETHYL) AMINOMETHANE, MAY CAUSE GASTROINTESTINAL IRRITATION
AND POSSIBLY BURNS TO THE MOUTH AND STOMACH. LARGE DOSES TO LABORATORY
ANIMALS CAUSED WEAKNESS, COLLAPSE AND COMA.
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION
IMMEDIATELY. IF VOMITING OCCURS, KEEP HEAD LOWER THAN HIPS TO PREVENT
ASPIRATION.

ANTIDOTE:
NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:
TRIS(HYDROXYMETHYL) AMINOMETHANE HYDROCHLORIDE:
OXIDIZERS (STRONG): FIRE AND EXPLOSION HAZARD.

DECOMPOSITION:
THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE TOXIC AND HAZARDOUS FUMES OF
CHLORINE, HYDROGEN CHLORIDE, AMMONIA, AND OXIDES OF NITROGEN.

POLYMERIZATION:
HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL
TEMPERATURES AND PRESSURES.

STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE.

****STORAGE****

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

CONDITIONS TO AVOID

MAY BURN BUT DOES NOT IGNITE READILY. AVOID CONTACT WITH STRONG OXIDIZERS, EXCESSIVE HEAT, SPARKS, OR OPEN FLAME.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:
STOP LEAK IF YOU CAN DO IT WITHOUT RISK. FOR SMALL SPILLS, TAKE UP WITH SAND OR OTHER ABSORBENT MATERIAL AND PLACE INTO CLEAN, DRY CONTAINERS FOR LATER DISPOSAL. KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY.

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE LOCAL EXHAUST VENTILATION. VENTILATION EQUIPMENT MUST BE EXPLOSION PROOF.

RESPIRATOR:
THE FOLLOWING RESPIRATORS ARE RECOMMENDED BASED ON INFORMATION FOUND IN THE PHYSICAL DATA, TOXICITY AND HEALTH EFFECTS SECTIONS. THEY ARE RANKED IN ORDER FROM MINIMUM TO MAXIMUM RESPIRATORY PROTECTION.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE. MUST BE BASED ON THE SPECIFIC OPERATION, MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND MUST BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA).

ANY DUST AND MIST RESPIRATOR WITH A FULL FACEPIECE.

ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.

ANY POWERED AIR-PURIFYING RESPIRATOR WITH A TIGHT-FITTING FACEPIECE AND HIGH-EFFICIENCY PARTICULATE FILTER.

ANY TYPE 'C' SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE OR WITH A FULL FACEPIECE, HELMET OR HOOD OPERATED IN CONTINUOUS-FLOW MODE.

ANY SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

ANY SUPPLIED-AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

CLOTHING:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

EMERGENCY EYE WASH: WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

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