MATERIAL SAFETY DATA SHEET PAGE 1

SECTION 1. -- -- -- -- -- -- -- CHEMICAL IDENTIFICATION -- -- -- -- -- -- --

CATALOG #: H9876
NAME: HYDROXYLAMINE HCL

SECTION 2. -- -- -- -- -- COMPOSITION/INFORMATION ON INGREDIENTS -- -- -- -- --

CAS #: 5470-11-1
MF: H3NO
EC NO: 226-798-2

SYNONYMS
HYDROXYLAMINE HYDROCHLORIDE * HYDROXYAMMONIUM CHLORIDE * HYDROXYLAMINE CHLORIDE * HYDROXYLAMINE CHLORIDE (1:1) * HYDROXYLAMMONIUM CHLORIDE *

SECTION 3. -- -- -- -- -- HAZARDS IDENTIFICATION -- -- -- -- --

LABEL PRECAUTIONARY STATEMENTS
TOXIC
TOXIC IF SWALLOWED.
HARMFUL BY INHALATION AND IN CONTACT WITH SKIN.
CAUSES BURNS.
MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.
HEATING MAY CAUSE AN EXPLOSION.
POSSIBLE RISK OF IRREVERSIBLE EFFECTS.
HARMFUL: DANGER OF SERIOUS DAMAGE TO HEALTH BY PROLONGED EXPOSURE IF SWALLOWED.
TARGET ORGAN(S): BLOOD
CENTRAL NERVOUS SYSTEM
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
DO NOT BREATHE DUST.
AVOID CONTACT WITH SKIN.
WEAR SUITABLE GLOVES.
AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/ SAFETY DATA SHEETS.

SECTION 4. -- -- -- -- -- FIRST-AID MEASURES -- -- -- -- --

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN IMMEDIATELY.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

CONTINUED ON NEXT PAGE

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SAINT LOUIS, MISSOURI 63178, USA

CUST#: 0-495-04629
PO#: CC/092999/MORSE

MATERIAL SAFETY DATA SHEET PAGE 2

CATALOG #: H9876
NAME: HYDROXYLAMINE HCL

ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS.

SECTION 5. - - - - - - - - FIRE FIGHTING MEASURES - - - - - - - -

EXTINGUISHING MEDIA
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
CONTAINER EXPLOSION MAY OCCUR UNDER FIRE CONDITIONS.
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. - - - - - - - - ACCIDENTAL RELEASE MEASURES - - - - - - - -

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
COVER WITH DRY LIME OR SODA ASH, PICK UP, KEEP IN A CLOSED CONTAINER AND HOLD FOR WASTE DISPOSAL.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE. EVACUATE AREA.

SECTION 7. - - - - - - - - HANDLING AND STORAGE - - - - - - - -

REFER TO SECTION 8.

SECTION 8. - - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION - - - - - -

SAFETY SHOWER AND EYE BATH.
USE ONLY IN A CHEMICAL FUME HOOD.
WASH THOROUGHLY AFTER HANDLING.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
DISCARD CONTAMINATED SHOES.
DO NOT BREATHE DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOOGLES, OTHER PROTECTIVE CLOTHING.
FACE SHIELD (8-INCH MINIMUM).
KEEP TIGHTLY CLOSED.
KEEP AWAY FROM HEAT AND OPEN FLAME.
STORE IN A COOL DRY PLACE.

SECTION 9. - - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - - -

PHYSICAL PROPERTIES
MELTING POINT: 155 - 157 C
SPECFIC GRAVITY: 1.67

SECTION 10. - - - - - - STABILITY AND REACTIVITY - - - - - -

CONTINUED ON NEXT PAGE

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MATERIAL SAFETY DATA SHEET

CATALOG #: 
NAME: H9876
HYDROXYLAMINE HCL

STABILITY
STABLE.

CONDITIONS TO AVOID
SENSITIVE TO AIR

INCOMPATIBILITIES
SENSITIVE TO MOISTURE
STRONG OXIDIZING AGENTS

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
NITROGEN OXIDES
HYDROGEN CHLORIDE GAS

HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS
HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
MAY CAUSE ALLERGIC REACTION.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.
MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES
AND UPPER RESPIRATORY TRACT, EYES AND SKIN.
INHALATION MAY RESULT IN SPAAM, INFLAMMATION AND EDEMA OF THE
LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING,
WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND
VOMITING.
ABSORPTION INTO THE BODY LEADS TO THE FORMATION OF METHEMOGLOBIN
WHICH IN SUFFICIENT CONCENTRATION CAUSES CYANOSIS. ONSET MAY BE
DELayed 2 TO 4 HOURS OR LONGER.
MAY CAUSE CONVULSIONS.

CHRONIC EFFECTS
TARGET ORGAN(S):
BLOOD
CENTRAL NERVOUS SYSTEM

RTECS #: NC3675000
HYDROXYLAMINE, HYDROCHLORIDE

TOXICITY DATA
ORL-RAT LD50: 141 MG/KG
ORL-MUS LD50: 408 MG/KG
IPR-MUS LD50: 10 MG/KG
SCU-MUS LD50: 125 MG/KG

TARGET ORGAN DATA

CONTINUED ON NEXT PAGE

10105
CATALOG #: H9876
NAME: HYDROXYLAMINE HCL

BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD) ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

SECTION 12. ECOLOGICAL INFORMATION

DATA NOT YET AVAILABLE.

SECTION 13. DISPOSAL CONSIDERATIONS

DISOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. TRANSPORT INFORMATION

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. REGULATORY INFORMATION

EUROPEAN INFORMATION

TOXIC
R 22 HARMFUL IF SWALLOWED.
R 36/38 IRRITATING TO EYES AND SKIN.
R 43 MAY CAUSE SENSITIZATION BY SKIN CONTACT.
R 48/22 HARMFUL: DANGER OF SERIOUS DAMAGE TO HEALTH BY PROLONGED EXPOSURE IF SWALLOWED.
R 50 VERY TOXIC TO AQUATIC ORGANISMS.
S 22 DO NOT BREATHE DUST.
S 24 AVOID CONTACT WITH SKIN.
S 37 WEAR SUITABLE GLOVES.
S 61 AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/SAFETY DATA SHEETS.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
NOHS 1974: HZD 38950; NIS 18; TNF 1202; NOS 11; TNE 6578
NOBS 1983: HZD 38950; NIS 20; TNF 1258; NOS 26; TNE 15258; TFE 4469
EPA GENETOX PROGRAM 1988, POSITIVE: CELL TRANSFORM.-RLV F344 RAT EMBRYO
EPA GENETOX PROGRAM 1988, POSITIVE: E COLI POLA WITHOUT S9; S CERECISIAE-FORWARD MUTATION

CONTINUED ON NEXT PAGE
M A T E R I A L S A F E T Y D A T A S H E E T

CATALOG #: H9876
NAME: HYDROXYLAMINE HCL

EPA GENETOX PROGRAM 1988, POSITIVE: S CEREVISIAE-HOMOZYGOSIS
EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM.-BALB/C-3T3;
SHE-CLONAL ASSAY

EPA GENETOX PROGRAM 1988, NEGATIVE: HISTIDINE REVERSION-AMES TEST
EPA GENETOX PROGRAM 1988, NEGATIVE: IN VITRO UDS-HUMAN FIBROBLASTS
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: D MELANOGASTER SEX-LINKED
LETHAL

EPA TSCA SECTION 8(b) CHEMICAL INVENTORY
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JUNE 1999

SECTION 16. OTHER INFORMATION

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO
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