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SDS

Common Name: ZEREX HD EXTENDED LIFE EXTENDER ANTIFREEZE ADDITIVE**Manufacturer:** ASHLAND CHEMICAL**SDS Revision Date:** 5/21/2015**SDS Format:** GHS-US**Item Number(s):** 4NPP7**Manufacturer Model Number(s):**

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ASHLAND (R*)

SAFETY DATA SHEET

ZEREX(TM) HD EXTENDED LIFE EXTENDER ANTIFREEZE ADDITIVE

ZXEDX3

REVISION DATE: 05/21/2015

PRINT DATE: 1/20/2016

SDS NUMBER: R0379208

VERSION: 1.0

29 CFR 1910.1200 (OSHA HAZCOM 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION



PRODUCT IDENTIFIER:

TRADE NAME: ZEREX(TM) HD EXTENDED LIFE EXTENDER ANTIFREEZE ADDITIVE

RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE:

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

ASHLAND

P.O. BOX 2219

COLUMBUS, OH 43216

UNITED STATES OF AMERICA

EHS CUSTOMER REQUESTS@ASHLAND.COM

EMERGENCY TELEPHONE NUMBER: 1-800-ASHLAND (1-800-274-5263)

REGULATORY INFORMATION NUMBER: 1-800-325-3751

PRODUCT INFORMATION: 614-790-3333

SECTION 2. HAZARDS IDENTIFICATION



GHS CLASSIFICATION:

ACUTE TOXICITY (ORAL): CATEGORY 4

SKIN CORROSION: CATEGORY 1

SERIOUS EYE DAMAGE: CATEGORY 1

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY - REPEATED EXPOSURE (ORAL):
CATEGORY 2 (KIDNEY, LIVER)

GHS LABEL ELEMENT:

HAZARD PICTOGRAMS:

HEALTH HAZARD

CORROSION

EXCLAMATION MARK

SIGNAL WORD: DANGER

HAZARD STATEMENTS:

HARMFUL IF SWALLOWED.

CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

CAUSES SERIOUS EYE DAMAGE.

MAY CAUSE DAMAGE TO ORGANS (KIDNEY, LIVER) THROUGH PROLONGED OR REPEATED
EXPOSURE IF SWALLOWED.

PRECAUTIONARY STATEMENTS:

PREVENTION:

DO NOT BREATHE DUST/FUME/GAS/MIST/VAPORS/SPRAY.

WASH SKIN THOROUGHLY AFTER HANDLING.

DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT.

WEAR PROTECTIVE GLOVES/PROTECTIVE CLOTHING/EYE PROTECTION/FACE PROTECTION.

RESPONSE:

IF SWALLOWED:

CALL A POISON CENTER OR DOCTOR/PHYSICIAN IF YOU FEEL UNWELL. RINSE MOUTH.

IF SWALLOWED: RINSE MOUTH. DO NOT INDUCE VOMITING.

IF ON SKIN (OR HAIR):

TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH
WATER/SHOWER.

IF INHALED:

REMOVE PERSON TO FRESH AIR AND KEEP COMFORTABLE FOR BREATHING. IMMEDIATELY CALL A POISON CENTER OR DOCTOR/PHYSICIAN.

IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES.

REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING. IMMEDIATELY CALL A POISON CENTER OR DOCTOR/PHYSICIAN.

GET MEDICAL ADVICE/ATTENTION IF YOU FEEL UNWELL.

WASH CONTAMINATED CLOTHING BEFORE REUSE.

STORAGE: STORE LOCKED UP.

DISPOSAL:

DISPOSE OF CONTENTS/CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

OTHER HAZARDS: NONE KNOWN.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE / MIXTURE: MIXTURE

HAZARDOUS COMPONENTS:

| CHEMICAL NAME | CAS-NO. | CLASSIFICATION | CONCENTRATION (%) |
|----------------------------|------------|--|-------------------|
| ETHYLENE GLYCOL | 107-21-1 | ACUTE TOX. 4; H302 STOT RE 2; H373 | 80.90 |
| SODIUM NITRITE | 7632-00-0 | OX. SOL. 2; H272 ACUTE TOX. 3; H301 EYE IRRIT. 2A; H319 | 4.94 |
| DIETHYLENE GLYCOL | 111-46-6 | ACUTE TOX. 4; H302 STOT RE 2; H373 | 4.16 |
| TOLYLTRIAZOLE, SODIUM SALT | 64665-57-2 | ACUTE TOX. 4; H302 SKIN CORR. 1; H314 EYE DAM. 1; H318 | 2.01 |
| SODIUM SILICATE | 1344-09-8 | SKIN IRRIT. 2; H315 EYE DAM. 1; H318 | 1.17 |

SODIUM HYDROXIDE 1310-73-2 MET. CORR. 1; 1.06
H290

SKIN CORR. 1A;
H314

AQUATIC ACUTE 3;
H402

SECTION 4. FIRST AID MEASURES



GENERAL ADVICE:

MOVE OUT OF DANGEROUS AREA.
CONSULT A PHYSICIAN.
SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.
DO NOT LEAVE THE VICTIM UNATTENDED.

IF INHALED:

MOVE TO FRESH AIR.
IF BREATHED IN, MOVE PERSON INTO FRESH AIR.
KEEP PATIENT WARM AND AT REST.
IF UNCONSCIOUS PLACE IN RECOVERY POSITION AND SEEK MEDICAL ADVICE.
IF SYMPTOMS PERSIST, CALL A PHYSICIAN.

IN CASE OF SKIN CONTACT:

IF ON SKIN, RINSE WELL WITH WATER.
WASH CONTAMINATED CLOTHING BEFORE RE-USE.

IN CASE OF EYE CONTACT:

IN THE CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER
AND SEEK MEDICAL ADVICE.

CONTINUE RINSING EYES DURING TRANSPORT TO HOSPITAL.

REMOVE CONTACT LENSES.

PROTECT UNHARMED EYE.

IF SWALLOWED:

GET MEDICAL ATTENTION IMMEDIATELY.
DO NOT INDUCE VOMITING.
RINSE MOUTH WITH WATER.
DO NOT GIVE MILK OR ALCOHOLIC BEVERAGES.
NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.
IF SYMPTOMS PERSIST, CALL A PHYSICIAN.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

EFFECTS OF ACUTE ETHYLENE GLYCOL POISONING APPEAR IN THREE FAIRLY DISTINCT STAGES. THE INITIAL STAGE OCCURS SHORTLY AFTER EXPOSURE, LASTS 6-12 HOURS, AND IS CHARACTERIZED BY CENTRAL NERVOUS SYSTEM EFFECTS (TRANSIENT EXHILARATION, NAUSEA, VOMITING, AND IN SEVERE CASES, COMA, CONVULSIONS, AND POSSIBLE DEATH). THE SECOND STAGE LASTS FROM 12-36 HOURS AFTER EXPOSURE AND IS INITIATED BY THE ONSET OF COMA. THIS PHASE IS CHARACTERIZED BY TACHYPNIA, TACHYCARDIA, MILD HYPOTENSION, CYANOSIS, AND IN SEVERE CASES, PULMONARY EDEMA, BRONCHOPNEUMONIA, CARDIAC ENLARGEMENT, AND CONGESTIVE FAILURE. THE FINAL STAGE OCCURS 24-72 POST-EXPOSURE AND IS CHARACTERIZED BY RENAL FAILURE, RANGING FROM A MILD INCREASE IN BLOOD UREA NITROGEN AND CREATININE FOLLOWED BY RECOVERY, TO COMPLETE ANURIA WITH ACUTE TUBULAR NECROSIS THAT CAN LEAD TO DEATH. OXALURIA IS FOUND IN MOST CASES. THE MOST SIGNIFICANT LABORATORY FINDING IN ETHYLENE GLYCOL INTOXICATION IS SEVERE METABOLIC ACIDOSIS.

OVEREXPOSURE TO THIS PRODUCT (OR A COMPONENT) MAY CAUSE METHEMOGLOBINEMIA, WHICH IN SUFFICIENT CONCENTRATION CAUSES CYANOSIS. SEVERE CYANOSIS MAY REQUIRE INTRAVENOUS INJECTION OF METHYLENE BLUE. METHYLENE BLUE IS

CONTRAINDICATED IF THE PATIENT HAS CONFIRMED OR SUSPECTED
GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY.

PULMONARY EDEMA MAY BE DELAYED.

SIGNS AND SYMPTOMS OF EXPOSURE TO THIS MATERIAL THROUGH BREATHING,
SWALLOWING, AND/OR PASSAGE OF THE MATERIAL THROUGH THE SKIN MAY INCLUDE:
STOMACH OR INTESTINAL UPSET (NAUSEA, VOMITING, DIARRHEA)

IRRITATION (NOSE, THROAT, AIRWAYS)

COUGH

PAIN IN THE ABDOMEN AND LOWER BACK

SHORTNESS OF BREATH

CYANOSIS (CAUSES BLUE COLORING OF THE SKIN AND NAILS FROM LACK OF OXYGEN)

LUNG EDEMA (FLUID BUILDUP IN THE LUNG TISSUE)

ACUTE KIDNEY FAILURE (SUDDEN SLOWING OR STOPPING OF URINE PRODUCTION)

CONVULSIONS

DIFFICULTY IN BREATHING

HARMFUL IF SWALLOWED.

CAUSES SERIOUS EYE DAMAGE.

MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE IF
SWALLOWED.

CAUSES SEVERE BURNS.

NOTES TO PHYSICIAN:

THIS PRODUCT CONTAINS ETHYLENE GLYCOL. ETHANOL DECREASES THE METABOLISM
OF ETHYLENE GLYCOL TO TOXIC METABOLITES. ETHANOL SHOULD BE ADMINISTERED AS
SOON AS POSSIBLE IN CASES OF SEVERE POISONING SINCE THE ELIMINATION
HALF-LIFE OF ETHYLENE GLYCOL IS 3 HOURS. IF MEDICAL CARE WILL BE DELAYED
SEVERAL HOURS, GIVE THE PATIENT THREE TO FOUR 1-OUNCE ORAL "SHOTS" OF
86-PROOF OR HIGHER WHISKEY BEFORE OR DURING TRANSPORT TO THE HOSPITAL.
FOMEPIZOLE (4-METHYLPYRAZOLE) IS AN EFFECTIVE ANTAGONIST OF ALCOHOL
DEHYDROGENASE, AND AS SUCH, MAY BE USED AS AN ANTIDOTE IN THE TREATMENT
OF ETHYLENE GLYCOL POISONING. HEMODIALYSIS EFFECTIVELY REMOVES ETHYLENE
GLYCOL AND ITS METABOLITES FROM THE BODY.

SECTION 5. FIREFIGHTING MEASURES



SUITABLE EXTINGUISHING MEDIA:

USE EXTINGUISHING MEASURES THAT ARE APPROPRIATE TO LOCAL CIRCUMSTANCES AND
THE SURROUNDING ENVIRONMENT.

WATER SPRAY

FOAM

CARBON DIOXIDE (CO2)

DRY CHEMICAL

UNSUITABLE EXTINGUISHING MEDIA: HIGH VOLUME WATER JET

SPECIFIC HAZARDS DURING FIREFIGHTING:

DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO ENTER DRAINS OR WATER COURSES.

HAZARDOUS COMBUSTION PRODUCTS:

ALCOHOLS
ALDEHYDES
CARBON DIOXIDE AND CARBON MONOXIDE
ETHERS
TOXIC FUMES
NITROGEN COMPOUNDS
NITROGEN OXIDES (NOX)
HYDROCARBONS
HYDROGEN CYANIDE IN REDUCING ATMOSPHERES
NITROGEN OXIDES (NOX)
CORROSIVE VAPORS
SODIUM OXIDES

SPECIFIC EXTINGUISHING METHODS:

PRODUCT IS COMPATIBLE WITH STANDARD FIRE-FIGHTING AGENTS.

FURTHER INFORMATION:

FIRE RESIDUES AND CONTAMINATED FIRE EXTINGUISHING WATER MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS:

IN THE EVENT OF FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS.

SECTION 6. ACCIDENTAL RELEASE MEASURES



PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:
USE PERSONAL PROTECTIVE EQUIPMENT.

PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED.

ENVIRONMENTAL PRECAUTIONS:

PREVENT PRODUCT FROM ENTERING DRAINS.

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO.

IF THE PRODUCT CONTAMINATES RIVERS AND LAKES OR DRAINS INFORM RESPECTIVE AUTHORITIES.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:

SOAK UP WITH INERT ABSORBENT MATERIAL (E.G. SAND, SILICA GEL, ACID BINDER, UNIVERSAL BINDER, SAWDUST).

KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

OTHER INFORMATION:

COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

SECTION 7. HANDLING AND STORAGE



ADVICE ON SAFE HANDLING:

DO NOT BREATHE VAPOURS/DUST.

DO NOT SMOKE.

CONTAINER HAZARDOUS WHEN EMPTY.

AVOID CONTACT WITH SKIN AND EYES.

SMOKING, EATING AND DRINKING SHOULD BE PROHIBITED IN THE APPLICATION AREA.

FOR PERSONAL PROTECTION SEE SECTION 8.

DISPOSE OF RINSE WATER IN ACCORDANCE WITH LOCAL AND NATIONAL REGULATIONS.

CONDITIONS FOR SAFE STORAGE:

KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE.

CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE.

OBSERVE LABEL PRECAUTIONS.

ELECTRICAL INSTALLATIONS / WORKING MATERIALS MUST COMPLY WITH THE TECHNOLOGICAL SAFETY STANDARDS.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION



COMPONENTS WITH WORKPLACE CONTROL PARAMETERS:

| COMPONENTS | CAS-NO. | VALUE TYPE (FORM OF EXPOSURE) | CONTROL PARAMETERS / PERMISSIBLE CONCENTRATION | BASIS |
|-------------------|-----------|-------------------------------------|---|-------------|
| ETHYLENE GLYCOL | 107-21-1 | CEILING | 100 MG/M3 AEROSOL. | ACGIH |
| | | TWA | 10 MG/M3 INHALABLE FRACTION AND VAPOR | ACGIHLIS_P |
| DIETHYLENE GLYCOL | 111-46-6 | TWA | 10 MG/M3 | WEEL |
| SODIUM HYDROXIDE | 1310-73-2 | CEILING | 2 MG/M3 | ACGIH |
| | | CEIL_TIME | 2 MG/M3 | NIOSH/GUIDE |
| | | PEL | 2 MG/M3 | OSHA_TRANS |

ENGINEERING MEASURES:

PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW EXPOSURE GUIDELINES (IF APPLICABLE) OR BELOW LEVELS THAT CAUSE KNOWN, SUSPECTED OR APPARENT ADVERSE EFFECTS.

PERSONAL PROTECTIVE EQUIPMENT:

HAND PROTECTION:

REMARKS:

THE SUITABILITY FOR A SPECIFIC WORKPLACE SHOULD BE DISCUSSED WITH THE PRODUCERS OF THE PROTECTIVE GLOVES.

EYE PROTECTION:

WEAR CHEMICAL SPLASH GOGGLES AND FACE SHIELD WHEN THERE IS POTENTIAL FOR EXPOSURE OF THE EYES OR FACE TO LIQUID, VAPOR OR MIST.

MAINTAIN EYE WASH STATION IN IMMEDIATE WORK AREA.

SKIN AND BODY PROTECTION:

WEAR AS APPROPRIATE:
IMPERVIOUS CLOTHING

CHEMICAL RESISTANT APRON

SAFETY SHOES

CHOOSE BODY PROTECTION ACCORDING TO THE AMOUNT AND CONCENTRATION OF THE DANGEROUS SUBSTANCE AT THE WORK PLACE. DISCARD GLOVES THAT SHOW TEARS, PINHOLES, OR SIGNS OF WEAR. WEAR RESISTANT GLOVES (CONSULT YOUR SAFETY

EQUIPMENT SUPPLIER).

HYGIENE MEASURES:

WASH HANDS BEFORE BREAKS AND AT THE END OF WORKDAY.

WHEN USING DO NOT EAT OR DRINK.

ENSURE THAT EYEWASH STATIONS AND SAFETY SHOWERS ARE CLOSE TO THE WORKSTATION LOCATION.

WHEN USING DO NOT SMOKE.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES



APPEARANCE: VISCOUS

PHYSICAL STATE: LIQUID

COLOUR: RED

ODOUR: NO DATA AVAILABLE

ODOUR THRESHOLD: NO DATA AVAILABLE

PH: AVERAGE 11.5

MELTING POINT/FREEZING POINT: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: 330 DEG. F / 166 DEG. C (1013 HPA)

FLASH POINT: >250 DEG. F / >121 DEG. C

EVAPORATION RATE: NO DATA AVAILABLE

FLAMMABILITY (SOLID, GAS): NO DATA AVAILABLE

UPPER EXPLOSION LIMIT: 15.3 % (V) CALCULATED EXPLOSIVE LIMIT

LOWER EXPLOSION LIMIT: 3.2 % (V) CALCULATED EXPLOSIVE LIMIT

VAPOUR PRESSURE: 32 HPA (25 DEG. C) CALCULATED VAPOR PRESSURE

RELATIVE VAPOUR DENSITY: NO DATA AVAILABLE

RELATIVE DENSITY:

AVERAGE: 1.1575 (60.00 DEG. F)

DENSITY:

AVERAGE: 1.1575 G/CM3 (60.00 DEG. F)

SOLUBILITY (IES):

WATER SOLUBILITY: NO DATA AVAILABLE

SOLUBILITY IN OTHER SOLVENTS: NO DATA AVAILABLE

PARTITION COEFFICIENT N-OCTANOL/WATER: NO DATA AVAILABLE

THERMAL DECOMPOSITION: NO DATA AVAILABLE

VISCOSITY:

VISCOSITY, DYNAMIC: NO DATA AVAILABLE

VISCOSITY, KINEMATIC: NO DATA AVAILABLE

OXIDIZING PROPERTIES: NO DATA AVAILABLE

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY: NO DECOMPOSITION IF STORED AND APPLIED AS DIRECTED.

CHEMICAL STABILITY: STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

POSSIBILITY OF HAZARDOUS REACTIONS:
PRODUCT WILL NOT UNDERGO HAZARDOUS POLYMERIZATION.

CONDITIONS TO AVOID:
EXCESSIVE HEAT
DO NOT ALLOW EVAPORATION TO DRYNESS.
EXPOSURE TO SUNLIGHT.
EXPOSURE TO MOISTURE

INCOMPATIBLE MATERIALS:
ACIDS
ACTIVATED CARBON
ALCOHOLS
ALDEHYDES
ALKALI METALS
ALKALINE EARTH METALS
AMMONIUM SALTS
AMINES
AMMONIA
BASES
COMBUSTIBLE MATERIAL
CYANIDES
HALOGENATED HYDROCARBONS
METALS
ORGANIC NITRO COMPOUNDS
OXIDIZABLE SUBSTANCES
POWDERED METALS
REDUCING AGENTS
STRONG ALKALIS
STRONG OXIDIZING AGENTS
SULPHUR COMPOUNDS
WATER

HAZARDOUS DECOMPOSITION PRODUCTS:
ALCOHOLS
ALDEHYDES
CARBON DIOXIDE AND CARBON MONOXIDE
CORROSIVE VAPORS
ETHERS
HYDROCARBONS
HYDROGEN CYANIDE IN REDUCING ATMOSPHERES
NITROGEN COMPOUNDS
NITROGEN OXIDES (NOX)
ORGANIC ACIDS
SODIUM OXIDES
TOXIC FUMES
KETONES

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON LIKELY ROUTES OF EXPOSURE:
INHALATION
SKIN CONTACT
EYE CONTACT
INGESTION

ACUTE TOXICITY: HARMFUL IF SWALLOWED.

PRODUCT:

ACUTE ORAL TOXICITY:

REMARKS:

INGESTION OF MEDICATIONS CONTAMINATED WITH DIETHYLENE GLYCOL HAS CAUSED KIDNEY FAILURE AND DEATH IN HUMANS. PRODUCTS CONTAINING DIETHYLENE GLYCOL SHOULD BE CONSIDERED TOXIC BY INGESTION.

ACUTE DERMAL TOXICITY:

REMARKS:

SKIN ABSORPTION OF THIS MATERIAL (OR A COMPONENT) MAY BE INCREASED THROUGH INJURED SKIN.

COMPONENTS:

ETHYLENE GLYCOL:

ACUTE ORAL TOXICITY:

LD 50 (RAT): 6,140 MG/KG

LD50 (HUMAN):

ESTIMATED: 1.56 G/KG

ASSESSMENT:

THE COMPONENT/MIXTURE IS CLASSIFIED AS ACUTE ORAL TOXICITY, CATEGORY 4.

ACUTE INHALATION TOXICITY:

LC 50 (RAT): 10.9 MG/L

EXPOSURE TIME: 1 H

TEST ATMOSPHERE: DUST/MIST

ASSESSMENT:

NO ADVERSE EFFECT HAS BEEN OBSERVED IN ACUTE INHALATION TOXICITY TESTS.

ACUTE DERMAL TOXICITY:

LD50 (RABBIT): 9,530 MG/KG

SODIUM NITRITE:

ACUTE ORAL TOXICITY:

LD50 (RAT): 180 MG/KG

ACUTE INHALATION TOXICITY:

LC50 (RAT): 5.5 MG/L

EXPOSURE TIME: 4 H

DIETHYLENE GLYCOL:

ACUTE ORAL TOXICITY:

LD50 (HUMAN): EXPECTED 1,120 MG/KG

TARGET ORGANS: KIDNEY

ACUTE INHALATION TOXICITY:

LC50 (RAT): >4.6 MG/L

EXPOSURE TIME: 4 H

TEST ATMOSPHERE: DUST/MIST

ASSESSMENT:

NO ADVERSE EFFECT HAS BEEN OBSERVED IN ACUTE INHALATION TOXICITY TESTS.

ACUTE DERMAL TOXICITY:

LD50 (RABBIT): 13,300 MG/KG

TOLYLTRIAZOLE, SODIUM SALT:

ACUTE ORAL TOXICITY:

LD50 (RAT, FEMALE): 735 MG/KG

ACUTE DERMAL TOXICITY:

LD50 (RABBIT): >2,000 MG/KG

ASSESSMENT: NOT CLASSIFIED AS ACUTELY TOXIC BY DERMAL ABSORPTION UNDER GHS.

SODIUM SILICATE:

ACUTE ORAL TOXICITY:

LD50 (RAT, MALE AND FEMALE): 3,400 MG/KG

METHOD: OECD TEST GUIDELINE 401

REMARKS:

INFORMATION GIVEN IS BASED ON DATA OBTAINED FROM SIMILAR SUBSTANCES.

ACUTE DERMAL TOXICITY:

LD50 (RABBIT): >5,000 MG/KG

REMARKS:

INFORMATION GIVEN IS BASED ON DATA OBTAINED FROM SIMILAR SUBSTANCES.

SODIUM HYDROXIDE:

ACUTE ORAL TOXICITY:

LDLO (RABBIT): 500 MG/KG

ACUTE INHALATION TOXICITY:

ASSESSMENT: NOT CLASSIFIED AS ACUTELY TOXIC BY INHALATION UNDER GHS.

REMARKS: MODERATE RESPIRATORY IRRITANT

ACUTE DERMAL TOXICITY:

SYMPTOMS: CORROSION

ASSESSMENT: NOT CLASSIFIED AS ACUTELY TOXIC BY DERMAL ABSORPTION UNDER GHS.

SKIN CORROSION/IRRITATION: CAUSES SEVERE BURNS.

PRODUCT:

REMARKS:

CAUSES SEVERE SKIN BURNS AND EYE DAMAGE., THE FEELING OF IRRITATION OR PAIN MAY BE DELAYED.

COMPONENTS:

ETHYLENE GLYCOL:

RESULT: MILDLY IRRITATING TO SKIN

SODIUM NITRITE:

RESULT: NOT IRRITATING TO SKIN

DIETHYLENE GLYCOL:

SPECIES: HUMAN

RESULT: SLIGHTLY IRRITATING TO SKIN

TOLYLTRIAZOLE, SODIUM SALT:

RESULT: CORROSIVE TO SKIN

SODIUM SILICATE:

RESULT: IRRITATING TO SKIN

SODIUM HYDROXIDE:

RESULT: CORROSIVE TO SKIN

SERIOUS EYE DAMAGE/EYE IRRITATION: CAUSES SERIOUS EYE DAMAGE.

PRODUCT:

REMARKS: MAY CAUSE IRREVERSIBLE EYE DAMAGE.

COMPONENTS:

ETHYLENE GLYCOL:

RESULT: POSSIBLY IRRITATING TO EYES

SODIUM NITRITE:

RESULT: IRRITATING TO EYES

DIETHYLENE GLYCOL:
SPECIES: RABBIT
RESULT: SLIGHTLY IRRITATING TO EYES

TOLYLTRIAZOLE, SODIUM SALT:
RESULT: CORROSIVE TO EYES

SODIUM SILICATE:
RESULT: RISK OF SERIOUS DAMAGE TO EYES.

SODIUM HYDROXIDE:
RESULT: CORROSIVE TO EYES

RESPIRATORY OR SKIN SENSITISATION:
SKIN SENSITISATION: NOT CLASSIFIED BASED ON AVAILABLE INFORMATION.
RESPIRATORY SENSITISATION: NOT CLASSIFIED BASED ON AVAILABLE INFORMATION.

COMPONENTS:

DIETHYLENE GLYCOL:
TEST TYPE: MAXIMISATION TEST (GPMT)
SPECIES: GUINEA PIG
METHOD: DIRECTIVE 67/548/EEC, ANNEX V, B.6.
RESULT: DID NOT CAUSE SENSITISATION ON LABORATORY ANIMALS.

SODIUM HYDROXIDE:
EXPOSURE ROUTES: SKIN CONTACT
SPECIES: HUMANS
RESULT: NEGATIVE

GERM CELL MUTAGENICITY: NOT CLASSIFIED BASED ON AVAILABLE INFORMATION.

COMPONENTS:

DIETHYLENE GLYCOL:
GENOTOXICITY IN VITRO:
TEST TYPE: AMES TEST
METABOLIC ACTIVATION: WITH AND WITHOUT METABOLIC ACTIVATION
METHOD: OECD TEST GUIDELINE 471
RESULT: NEGATIVE
GLP: YES

TEST SPECIES: CHINESE HAMSTER OVARY CELLS
METABOLIC ACTIVATION: WITH AND WITHOUT METABOLIC ACTIVATION
METHOD: OECD TEST GUIDELINE 479
RESULT: NEGATIVE
GLP: YES

GENOTOXICITY IN VIVO:
TEST TYPE: IN VIVO MICRONUCLEUS TEST
TEST SPECIES: MOUSE
METHOD: OECD TEST GUIDELINE 474
RESULT: NEGATIVE
GLP: YES

CARCINOGENICITY: NOT CLASSIFIED BASED ON AVAILABLE INFORMATION.

REPRODUCTIVE TOXICITY: NOT CLASSIFIED BASED ON AVAILABLE INFORMATION.

STOT - SINGLE EXPOSURE: NOT CLASSIFIED BASED ON AVAILABLE INFORMATION.

STOT - REPEATED EXPOSURE:
MAY CAUSE DAMAGE TO ORGANS (KIDNEY, LIVER) THROUGH PROLONGED OR REPEATED EXPOSURE IF SWALLOWED.

COMPONENTS:

ETHYLENE GLYCOL:
EXPOSURE ROUTES: INGESTION
TARGET ORGANS: KIDNEY, LIVER

ASSESSMENT:
MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

DIETHYLENE GLYCOL:
EXPOSURE ROUTES: INGESTION
TARGET ORGANS: KIDNEY

ASSESSMENT:
MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

ASPIRATION TOXICITY: NOT CLASSIFIED BASED ON AVAILABLE INFORMATION.

EXPERIENCE WITH HUMAN EXPOSURE:

COMPONENTS:

DIETHYLENE GLYCOL: LIVER

FURTHER INFORMATION:

PRODUCT:
REMARKS: NO DATA AVAILABLE

CARCINOGENICITY:

IARC:
NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS PROBABLE, POSSIBLE OR CONFIRMED HUMAN CARCINOGEN BY IARC.

OSHA:
NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR POTENTIAL CARCINOGEN BY OSHA.

NTP:
NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY NTP.

SECTION 12. ECOLOGICAL INFORMATION



ECOTOXICITY:

COMPONENTS:

ETHYLENE GLYCOL:
TOXICITY TO FISH:
LC50 (BLUEGILL (LEPOMIS MACROCHIRUS)): 27,540 MG/L
EXPOSURE TIME: 96 H
METHOD: STATIC
REMARKS: MORTALITY

LC50 (FATHEAD MINNOW (PIMEPHALES PROMELAS)): 8,050 MG/L
EXPOSURE TIME: 96 H

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES:
LC50 (WATER FLEA (DAPHNIA MAGNA)): >10,000 MG/L
EXPOSURE TIME: 48 H
TEST TYPE: STATIC TEST

SODIUM NITRITE:

TOXICITY TO FISH:

LC50 (ONCORHYNCHUS MYKISS (RAINBOW TROUT)): 0.54 - 26.3 MG/L

EXPOSURE TIME: 96 H

TEST TYPE: FLOW-THROUGH TEST

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES:

EC50 (WATER FLEA (DAPHNIA MAGNA)): 15.4 MG/L

EXPOSURE TIME: 48 H

TEST TYPE: STATIC TEST

METHOD: OECD TEST GUIDELINE 202

TOXICITY TO ALGAE:

EC50 (DESMODESMUS SUBSPICATUS (GREEN ALGAE)): >100 MG/L

EXPOSURE TIME: 72 H

TEST TYPE: GROWTH INHIBITION

METHOD: OECD TEST GUIDELINE 201

TOXICITY TO FISH (CHRONIC TOXICITY):

NOEC (ICTALURUS CATUS (CATFISH)): 6.16 MG/L

EXPOSURE TIME: 31 D

TEST TYPE: FLOW-THROUGH TEST

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES (CHRONIC TOXICITY):

NOEC (AQUATIC INVERTEBRATES): 9.86 MG/L

EXPOSURE TIME: 80 D

TEST TYPE: STATIC TEST

TOXICITY TO BACTERIA:

EC10 (ACTIVATED SLUDGE): 210 MG/L

EXPOSURE TIME: 3 H

TEST TYPE: STATIC

METHOD: OECD TEST GUIDELINE 209

DIETHYLENE GLYCOL:

TOXICITY TO FISH:

LC 50 (FATHEAD MINNOW (PIMEPHALES PROMELAS)): 75,210 MG/L

EXPOSURE TIME: 96 H

TEST TYPE: FLOW-THROUGH TEST

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES:

LC 50 (WATER FLEA (DAPHNIA MAGNA)): >10,000 MG/L

EXPOSURE TIME: 24 H

TEST TYPE: STATIC TEST

METHOD: DIN 38412

TOLYLTRIAZOLE, SODIUM SALT:

TOXICITY TO FISH:

LC 50 (LEPOMIS MACROCHIRUS (BLUEGILL SUNFISH)): >173 MG/L

EXPOSURE TIME: 96 H

LC 50 (DANIO RERIO (ZEBRA FISH)): 122 MG/L

EXPOSURE TIME: 96 H

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES:

EC 50 (WATER FLEA (DAPHNIA MAGNA)): 280 MG/L

EXPOSURE TIME: 48 H

TOXICITY TO ALGAE:

EC 50 (PSEUDOKIRCHNERIELLA SUBCAPITATA (GREEN ALGAE)): 26.2 MG/L

EXPOSURE TIME: 72 H

TEST TYPE: GROWTH INHIBITION

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES (CHRONIC TOXICITY):

EC10 (WATER FLEA (DAPHNIA MAGNA)): 0.4 MG/L

EXPOSURE TIME: 21 D

TEST TYPE: SEMI-STATIC TEST

METHOD: OECD TEST GUIDELINE 211

REMARKS:

INFORMATION GIVEN IS BASED ON DATA OBTAINED FROM SIMILAR SUBSTANCES.

SODIUM HYDROXIDE:

TOXICITY TO FISH:

LC 50 (WESTERN MOSQUITOFISH (GAMBUSIA AFFINIS)): 125 MG/L

EXPOSURE TIME: 96 H

METHOD: STATIC

REMARKS: MORTALITY

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES:

EC 50 (WATER FLEA (DAPHNIA MAGNA)): 34.59 - 47.13 MG/L

EXPOSURE TIME: 48 H

REMARKS: INTOXICATION

TOXICITY TO BACTERIA:

REMARKS: NOT APPLICABLE

ECOTOXICOLOGY ASSESSMENT:

ACUTE AQUATIC TOXICITY: NEUTRALISATION WILL REDUCE ECOTOXIC EFFECTS.

CHRONIC AQUATIC TOXICITY:

THIS PRODUCT HAS NO KNOWN ECOTOXICOLOGICAL EFFECTS.

PERSISTENCE AND DEGRADABILITY:

COMPONENTS:

SODIUM NITRITE:

BIODEGRADABILITY:

RESULT:

THE METHODS FOR DETERMINING BIODEGRADABILITY ARE NOT APPLICABLE TO INORGANIC SUBSTANCES.

DIETHYLENE GLYCOL:

BIODEGRADABILITY:

RESULT: READILY BIODEGRADABLE

BIODEGRADATION: 70 - 80%

EXPOSURE TIME: 28 D

METHOD: OECD TEST GUIDELINE 301B

TOLYLTRIAZOLE, SODIUM SALT:

BIODEGRADABILITY:

RESULT: NOT READILY BIODEGRADABLE.

BIODEGRADATION: >70%

EXPOSURE TIME: 28 D

METHOD: OECD TEST GUIDELINE 302B

BIOACCUMULATIVE POTENTIAL:

COMPONENTS:

ETHYLENE GLYCOL:

BIOACCUMULATION:

SPECIES: CRAYFISH (PROCAMBARUS)

BIOCONCENTRATION FACTOR (BCF): 0.27

EXPOSURE TIME: 61 D

CONCENTRATION: 1000 MG/L

METHOD: FLOW THROUGH

PARTITION COEFFICIENT N-OCTANOL/WATER:

LOG POW: -1.36

SODIUM NITRITE:
PARTITION COEFFICIENT N-OCTANOL/WATER:
LOG POW: -3.700 (25 DEG. C)

DIETHYLENE GLYCOL:
BIOACCUMULATION:
SPECIES: LEUCISCUS IDUS (GOLDEN ORFE)
BIOCONCENTRATION FACTOR (BCF): 100

PARTITION COEFFICIENT N-OCTANOL/WATER:
LOG POW: -1.47

TOLYLTRIAZOLE, SODIUM SALT:
PARTITION COEFFICIENT N-OCTANOL/WATER:
LOG POW: 0.658

MOBILITY IN SOIL:

COMPONENTS:

SODIUM NITRITE:
STABILITY IN SOIL:
REMARKS: NOT EXPECTED TO ADSORB ON SOIL.

OTHER ADVERSE EFFECTS: NO DATA AVAILABLE

PRODUCT:
ADDITIONAL ECOLOGICAL INFORMATION:
AN ENVIRONMENTAL HAZARD CANNOT BE EXCLUDED IN THE EVENT OF UNPROFESSIONAL
HANDLING OR DISPOSAL., TOXIC TO AQUATIC LIFE.

COMPONENTS:

SECTION 13. DISPOSAL CONSIDERATIONS



DISPOSAL METHODS:

GENERAL ADVICE:
THE PRODUCT SHOULD NOT BE ALLOWED TO ENTER DRAINS, WATER COURSES OR THE
SOIL.

DO NOT CONTAMINATE PONDS, WATERWAYS OR DITCHES WITH CHEMICAL OR USED
CONTAINER.

SEND TO A LICENSED WASTE MANAGEMENT COMPANY.

DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL
REGULATIONS.

CONTAMINATED PACKAGING:
EMPTY REMAINING CONTENTS.

DISPOSE OF AS UNUSED PRODUCT.

EMPTY CONTAINERS SHOULD BE TAKEN TO AN APPROVED WASTE HANDLING SITE FOR
RECYCLING OR DISPOSAL.

DO NOT RE-USE EMPTY CONTAINERS.

SECTION 14. TRANSPORT INFORMATION



INTERNATIONAL TRANSPORT REGULATIONS:

REGULATION:

| ID NUMBER | PROPER SHIPPING NAME | *HAZARD CLASS | SUBSIDIARY HAZARDS | PACKING GROUP | MARINE POLLUTANT / LTD. QTY. |
|-----------|----------------------|---------------|--------------------|---------------|------------------------------|
|-----------|----------------------|---------------|--------------------|---------------|------------------------------|

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES:

| | | | | | |
|---------|---|---|--|-----|------------------|
| UN 1719 | CAUSTIC ALKALI LIQUIDS, N.O.S. (SODIUM HYDROXIDE, TRIAZOLE DERIVATIVE) | 8 | | III | LIMITED QUANTITY |
|---------|---|---|--|-----|------------------|

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER:

| | | | | | |
|---------|---|---|--|-----|------------------|
| UN 1719 | CAUSTIC ALKALI LIQUIDS, N.O.S. (SODIUM HYDROXIDE, TRIAZOLE DERIVATIVE) | 8 | | III | LIMITED QUANTITY |
|---------|---|---|--|-----|------------------|

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO:

| | | | | | |
|---------|---|---|--|-----|------------------|
| UN 1719 | CAUSTIC ALKALI LIQUIDS, N.O.S. (SODIUM HYDROXIDE, TRIAZOLE DERIVATIVE) | 8 | | III | LIMITED QUANTITY |
|---------|---|---|--|-----|------------------|

INTERNATIONAL MARITIME DANGEROUS GOODS:

| | | | | | |
|---------|--|---|--|-----|------------------|
| UN 1719 | CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE, TRIAZOLE DERIVATIVE) | 8 | | III | LIMITED QUANTITY |
|---------|--|---|--|-----|------------------|

TRANSPORT CANADA - INLAND WATERWAYS:

| | | | | | |
|---------|--|---|--|-----|------------------|
| UN 1719 | CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE, TRIAZOLE DERIVATIVE) | 8 | | III | LIMITED QUANTITY |
|---------|--|---|--|-----|------------------|

TRANSPORT CANADA - RAIL:

| | | | | | |
|---------|--|---|--|-----|------------------|
| UN 1719 | CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE, TRIAZOLE DERIVATIVE) | 8 | | III | LIMITED QUANTITY |
|---------|--|---|--|-----|------------------|

TRANSPORT CANADA - ROAD:

| | | | | | |
|---------|--|---|--|-----|--|
| UN 1719 | CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE, TRIAZOLE DERIVATIVE) | 8 | | III | |
|---------|--|---|--|-----|--|

U.S. DOT - INLAND WATERWAYS:

| | | | | | |
|---------|--|---|--|-----|--|
| UN 1719 | CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE, TRIAZOLE DERIVATIVE) | 8 | | III | |
|---------|--|---|--|-----|--|

U.S. DOT - RAIL:

| | | | | | |
|---------|---|---|--|-----|--|
| UN 1719 | CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE, | 8 | | III | |
|---------|---|---|--|-----|--|

TRIAZOLE DERIVATIVE)

U.S. DOT - ROAD:

UN 1719 LIQUIDOS ALCALINOS 8 III
 CAUSTICOS N.E.P.
 (SODIUM HYDROXIDE,
 TRIAZOLE DERIVATIVE)

*ORM = ORM-D

CBL = COMBUSTIBLE LIQUID

MARINE POLLUTANT: NO

DANGEROUS GOODS DESCRIPTIONS (IF INDICATED ABOVE) MAY NOT REFLECT QUANTITY,
 END-USE OR REGION-SPECIFIC EXCEPTIONS THAT CAN BE APPLIED. CONSULT SHIPPING
 DOCUMENTS FOR DESCRIPTIONS THAT ARE SPECIFIC TO THE SHIPMENT.

SECTION 15. REGULATORY INFORMATION

EPCRA - EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT:

CERCLA REPORTABLE QUANTITY:

| COMPONENTS | CAS-NO. | COMPONENT RQ (LBS) | CALCULATED PRODUCT RQ (LBS) |
|----------------|-----------|-----------------------|--------------------------------|
| SODIUM NITRITE | 7632-00-0 | 100 | 2024.250521 |

SARA 311/312 HAZARDS:
 ACUTE HEALTH HAZARD
 CHRONIC HEALTH HAZARD

SARA 313 COMPONENT(S):

| | | |
|-----------------|-----------|--------|
| ETHYLENE GLYCOL | 107-21-1 | 80.90% |
| SODIUM NITRITE | 7632-00-0 | 4.94% |

PENNSYLVANIA RIGHT TO KNOW:

| | | |
|-------------------|-----------|----------------|
| ETHYLENE GLYCOL | 107-21-1 | 70.00 - 90.00% |
| WATER | 7732-18-5 | 5.00 - 10.00% |
| SODIUM NITRITE | 7632-00-0 | 1.00 - 5.00% |
| DIETHYLENE GLYCOL | 111-46-6 | 1.00 - 5.00% |
| SODIUM HYDROXIDE | 1310-73-2 | 1.00 - 5.00% |

NEW JERSEY RIGHT TO KNOW:

| | | |
|----------------------------|------------|----------------|
| ETHYLENE GLYCOL | 107-21-1 | 70.00 - 90.00% |
| WATER | 7732-18-5 | 5.00 - 10.00% |
| SODIUM NITRITE | 7632-00-0 | 1.00 - 5.00% |
| DIETHYLENE GLYCOL | 111-46-6 | 1.00 - 5.00% |
| TOLYLTRIAZOLE, SODIUM SALT | 64665-57-2 | 1.00 - 5.00% |
| SODIUM HYDROXIDE | 1310-73-2 | 1.00 - 5.00% |

CALIFORNIA PROP 65:

PROPOSITION 65 WARNINGS ARE NOT REQUIRED FOR THIS PRODUCT BASED ON THE RESULTS OF A RISK ASSESSMENT.

THE COMPONENTS OF THIS PRODUCT ARE REPORTED IN THE FOLLOWING INVENTORIES:

TSCA: ON TSCA INVENTORY

DSL: ALL COMPONENTS OF THIS PRODUCT ARE ON THE CANADIAN DSL.

AUSTR: ON THE INVENTORY, OR IN COMPLIANCE WITH THE INVENTORY

NZIOC: ON THE INVENTORY, OR IN COMPLIANCE WITH THE INVENTORY

ENCS: NOT IN COMPLIANCE WITH THE INVENTORY

KECL: ON THE INVENTORY, OR IN COMPLIANCE WITH THE INVENTORY

PICCS: ON THE INVENTORY, OR IN COMPLIANCE WITH THE INVENTORY

IECSC: ON THE INVENTORY, OR IN COMPLIANCE WITH THE INVENTORY

INVENTORIES:

AICS (AUSTRALIA), DSL (CANADA), IECSC (CHINA), REACH (EUROPEAN UNION), ENCS (JAPAN), ISHL (JAPAN), KECI (KOREA), NZIOC (NEW ZEALAND), PICCS (PHILIPPINES), TSCA (USA)

SECTION 16. OTHER INFORMATION

FURTHER INFORMATION:

REVISION DATE: 05/21/2015

NFPA:

HEALTH 3
FLAMMABILITY 1
INSTABILITY 0
SPECIAL HAZARD.

HMIS III:

HEALTH 3*
FLAMMABILITY 1
PHYSICAL HAZARD 0

0 = NOT SIGNIFICANT

1 = SLIGHT

2 = MODERATE

3 = HIGH

4 = EXTREME

* = CHRONIC

NFPA FLAMMABLE AND COMBUSTIBLE LIQUIDS CLASSIFICATION:

COMBUSTIBLE LIQUID CLASS IIIB

FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.:

H272: MAY INTENSIFY FIRE; OXIDIZER.

H290: MAY BE CORROSIVE TO METALS.

H301: TOXIC IF SWALLOWED.

H302: HARMFUL IF SWALLOWED.

H314: CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

H315: CAUSES SKIN IRRITATION.

H318: CAUSES SERIOUS EYE DAMAGE.

H319: CAUSES SERIOUS EYE IRRITATION.

H373:

MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE IF SWALLOWED.

H402: HARMFUL TO AQUATIC LIFE.

SOURCES OF KEY DATA USED TO COMPILE THE SAFETY DATA SHEET

ASHLAND INTERNAL DATA INCLUDING OWN AND SPONSORED TEST REPORTS

THE UNECE ADMINISTERS REGIONAL AGREEMENTS IMPLEMENTING HARMONISED CLASSIFICATION FOR LABELLING (GHS) AND TRANSPORT.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES. THIS SDS HAS BEEN PREPARED BY ASHLAND'S ENVIRONMENTAL HEALTH AND SAFETY DEPARTMENT (1-800-325-3751).

LIST OF ABBREVIATIONS AND ACRONYMS THAT COULD BE, BUT NOT NECESSARILY ARE, USED IN THIS SAFETY DATA SHEET:

ACGIH: AMERICAN CONFERENCE OF INDUSTRIAL HYGIENISTS

BEI: BIOLOGICAL EXPOSURE INDEX

CAS:
CHEMICAL ABSTRACTS SERVICE (DIVISION OF THE AMERICAN CHEMICAL SOCIETY).

CMR: CARCINOGENIC, MUTAGENIC OR TOXIC FOR REPRODUCTION

FG: FOOD GRADE

GHS:
GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELING OF CHEMICALS.

H-STATEMENT: HAZARD STATEMENT

IATA: INTERNATIONAL AIR TRANSPORT ASSOCIATION.

IATA-DGR:
DANGEROUS GOODS REGULATION BY THE "INTERNATIONAL AIR TRANSPORT ASSOCIATION" (IATA).

ICAO: INTERNATIONAL CIVIL AVIATION ORGANIZATION

ICAO-TI (ICAO):
TECHNICAL INSTRUCTIONS BY THE "INTERNATIONAL CIVIL AVIATION ORGANIZATION"

IMDG: INTERNATIONAL MARITIME CODE FOR DANGEROUS GOODS

ISO: INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

LOGPOW: OCTANOL-WATER PARTITION COEFFICIENT

LCXX: LETHAL CONCENTRATION, FOR XX PERCENT OF TEST POPULATION

LDXX: LETHAL DOSE, FOR XX PERCENT OF TEST POPULATION.

ICXX: INHIBITORY CONCENTRATION FOR XX OF A SUBSTANCE

ECXX: EFFECTIVE CONCENTRATION OF XX

N.O.S.: NOT OTHERWISE SPECIFIED

OECD: ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

OEL: OCCUPATIONAL EXPOSURE LIMIT

P-STATEMENT: PRECAUTIONARY STATEMENT

PBT: PERSISTENT, BIOACCUMULATIVE AND TOXIC

PPE: PERSONAL PROTECTIVE EQUIPMENT

STEL: SHORT-TERM EXPOSURE LIMIT

STOT: SPECIFIC TARGET ORGAN TOXICITY

TLV: THRESHOLD LIMIT VALUE

TWA: TIME-WEIGHTED AVERAGE

VPVB: VERY PERSISTENT AND VERY BIOACCUMULATIVE

WEL: WORKPLACE EXPOSURE LEVEL

CERCLA:

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT

DOT: DEPARTMENT OF TRANSPORTATION

FIFRA: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT

HMIRC: HAZARDOUS MATERIALS INFORMATION REVIEW COMMISSION

HMIS: HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

NFPA: NATIONAL FIRE PROTECTION ASSOCIATION

NIOSH: NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

PMRA: HEALTH CANADA PEST MANAGEMENT REGULATORY AGENCY

RTK: RIGHT TO KNOW

WHMIS: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM