
MATERIAL SAFETY DATA SHEET

HELENA LABORATORIES
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Beaumont, TX 77704-0752
USA Toll Free 800-231-5663

DATE PREPARED: 11/8/2010
REVISION: 3

1. IDENTIFICATION:

PRODUCT NAME: PROTOFLUOR REAGENT - 2

PRODUCT NO.: 2002

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2. INGREDIENTS (THE ABOVE KIT CONTAINS THE FOLLOWING ITEMS):

Table with 4 columns: PRODUCT NUMBER, PRODUCT IDENTIFICATION (LABEL NAME), HAZARDOUS INGREDIENT, CAS #, %, COMMENTS. Row 1: 500736, PROTOFLUOR REAGENT, POTASSIUM CYANIDE, 151-50-8, 1.1, MSDS ATTACHED

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ATTACHED IS THE MSDS FOR THE ABOVE NAMED HAZARDOUS INGREDIENT.

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1. IDENTIFICATION:

NAME: POTASSIUM CYANIDE

CAS#: 151-50-8

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2. CHEMICAL COMPOSITION:

Table with 5 columns: CHEMICAL NAME/COMMON NAME, CAS #, %, EXPOSURE LIMITS (OSHA PEL, ACGIH TLV). Row 1: POTASSIUM CYANIDE, 151-50-8, 100, 5MG/M3 SKIN, 5MG/M3 SKIN

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NA = Not Applicable NE = Not Established
NL = Not Listed NIF = No Information Found

3. HAZARD IDENTIFICATION:

EMERGENCY OVERVIEW: POISON! DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CONTACT WITH ACIDS LIBERATES POISONOUS GAS. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS BLOOD, CARDIOVASCULAR SYSTEM, CENTRAL NERVOUS SYSTEM AND THYROID.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION? YES SKIN? YES INGESTION? YES

ACUTE EFFECT OF OVEREXPOSURE:

EYES: CORROSIVE. SYMPTOMS MAY INCLUDE REDNESS, PAIN, BLURRED VISION AND EYE DAMAGE.

SKIN: CORROSIVE. MAY CAUSE SEVERE PAIN AND SKIN BURNS. SOLUTIONS ARE CORROSIVE TO THE SKIN AND EYES AND MAY CAUSE DEEP ULCERS WHICH HEAL SLOWLY. MAY BE ABSORBED THROUGH THE SKIN WITH SYMPTOMS SIMILAR TO THOSE NOTED IN INHALATION.

INHALATION: CORROSIVE TO THE RESPIRATORY TRACT. THE SUBSTANCE INHIBITS CELLULAR RESPIRATION. MAY CAUSE HEADACHE, WEAKNESS, DIZZINESS, LABORED BREATHING, NAUSEA AND IRREGULAR HEART BEAT, UNCONSCIOUSNESS, CONVULSIONS, COMA AND DEATH.

INGESTION: HIGHLY TOXIC! CORROSIVE TO THE GASTROINTESTINAL TRACT WITH BURNING IN THE MOUTH AND ESOPHAGUS AND ABDOMINAL PAIN. MASSIVE DOSES MAY PRODUCE SUDDEN LOSS OF CONSCIOUSNESS AND PROMPT DEATH FROM RESPIRATORY ARREST. SMALLER BUT STILL LETHAL DOSES MAY PROLONG THE ILLNESS FOR ONE OR TWO HOURS. BITTER ALMONDS ODOR MAY BE NOTED ON THE BREATH OR VOMITUS. OTHER SYMPTOMS MAY BE SIMILAR TO THOSE NOTED FOR INHALATION EXPOSURE.

CHRONIC EFFECTS OF EXPOSURE: PROLONGED OR REPEATED SKIN EXPOSURE MAY CAUSE A "CYANIDE" RASH.

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4. FIRST AID MEASURES:

IN CASE OF CYANIDE POISONING, START FIRST AID TREATMENT IMMEDIATELY, THEN GET MEDICAL ATTENTION. A CYANIDE ANTIDOTE KIT (AMYL NITRITE AND SODIUM NITRITE AND SODIUM THIOSULFATE) SHOULD BE AVAILABLE IN ANY CYANIDE WORK AREA. ACTIONS TO BE TAKEN IN CASE OF CYANIDE POISONING SHOULD BE PLANNED AND PRACTICED BEFORE BEGINNING WORK WITH CYANIDES. OXYGEN AND AMYL NITRITE CAN BE GIVEN BY A FIRST RESPONDER BEFORE MEDICAL HELP ARRIVES. ALLOW VICTIM TO INHALE AMYL NITRITE 15-30 SECONDS PER MINUTE UNTIL SODIUM NITRITE AND SODIUM THIOSULFATE CAN BE ADMINISTERED INTRAVENOUSLY (SEE NOTE TO PHYSICIAN). A NEW AMYL NITRITE AMPULE SHOULD BE USED EVERY 3 MINUTES. IF CONSCIOUS BUT SYMPTOMS (NAUSEA, DIFFICULT BREATHING, DIZZINESS, ETC.) ARE EVIDENT, GIVE OXYGEN. IF CONSCIOUSNESS IS IMPAIRED (NON-RESPONSIVENESS, SLURRED SPEECH, CONFUSION, DROWSINESS) OR THE PATIENT IS UNCONSCIOUS BUT BREATHING, GIVE OXYGEN AND AMYL NITRITE BY MEANS OF A RESPIRATOR. IF NOT BREATHING, GIVE OXYGEN AND AMYL NITRITE IMMEDIATELY BY MEANS OF POSITIVE PRESSURE RESPIRATOR (ARTIFICIAL RESPIRATION).

4. FIRST AID MEASURES (cont):

EYE CONTACT: WASH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, LIFTING THE LOWER AND UPPER EYELIDS OCCASIONALLY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT: IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION IMMEDIATELY. WASH CLOTHING BEFORE REUSE. THOROUGHLY CLEAN SHOES BEFORE REUSE. ADMINISTER ANTIDOTE KIT AND OXYGEN PER PREPLANNED INSTRUCTIONS IF SYMPTOMS OCCUR.

INHALATION: IF INHALED, REMOVE TO FRESH AIR. ADMINISTER ANTIDOTE KIT AND OXYGEN PER PRE-PLANNED INSTRUCTIONS IF SYMPTOMS OCCUR. KEEP PATIENT WARM AND AT REST. DO NOT GIVE MOUTH TO MOUTH RESUCITATION.

INGESTION: IF INGESTED, ANTIDOTE KIT AND OXYGEN SHOULD BE ADMINISTERED PER ABOVE. IF THE PATIENT IS CONSCIOUS, IMMEDIATELY GIVE THE PATIENT ACTIVATED CHARCOAL SLURRY. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. DO NOT INDUCE VOMITING AS IT COULD INTERFERE WITH RESUCITATOR USE.

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5. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT (METHOD USED): NA

FLAMMABLE LIMITS: NA LEL NA UEL NA

EXTINGUISHING MEDIA: WATER SPRAY CAN BE USED TO EXTINGUISH FIRES AND COOL FIRE EXPOSED CONTAINERS. DO NOT USE CARBON DIOXIDE. USE ALKALI DRY CHEMICAL.

SPECIAL FIRE FIGHTING PROCEDURES: IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NOT CONSIDERED AN EXPLOSTION HAZARD, BUT UPON HEATING WITH CHLORATES OR NITRATES TO 450°C (845°F) MAY CAUSE AN EXPLOSION.

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6. SPILL OR LEAK PROCEDURES:

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SPILLS: VENTILATE AREA OF LEAK OR SPILL. ALLOW ONLY QUALIFIED PERSONNEL TO HANDLE SPILL. CLEAN-UP PERSONNEL REQUIRE PROTECTIVE CLOTHING AND RESPIRATORY PROTECTION FROM VAPORS. COLLECT MATERIAL AND PLACE IN A CLOSED CONTAINER FOR RECOVERY OR DISPOSAL. DO NOT FLUSH TO SEWER! DECONTAMINATE LIQUID OR SOLID RESIDUES IN SPILL AREA WITH SODIUM OR CALCIUM HYPOCHLORITE SOLUTION.

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7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

KEEP IN A TIGHTLY CLOSED CONTAINER. STORE IN A COOL DRY VENTILATED AREA. PROTECT AGAINST PHYSICAL DAMAGE. SEPARATE FROM INCOMPATIBILITIES.

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8. EXPOSURE CONTROL/PERSONAL PROTECTION:

RESPIRATORY PROTECTION (SPECIFY TYPE): NIOSH APPROVED

VENTILATION: LOCAL EXHAUST: X MECHANICAL: OTHER:

PROTECTIVE GLOVES: CHEMICAL RESISTANT GLOVES.

EYE PROTECTION: SAFETY GOGGLES AND/OR FULL FACE SHIELD.

OTHER PROTECTIVE EQUIPMENT: SAFETY SHOWER AND EYE BATH.

WEAR IMPERVIOUS PROTECTIVE CLOTHING, INCLUDING BOOTS, GLOVES, LAB COAT, APRON OR COVERALLS, AS APPROPRIATE, TO PREVENT SKIN CONTACT.

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9. PHYSICAL DATA:

BOILING POINT: 1625°C SPECIFIC GRAVITY (H2O = 1): 1.55 pH: 11(0.1N SOLUTION)

VAPOR PRESSURE (MM HG.): NIF MELTING POINT: 634°C

VAPOR DENSITY (AIR = 1): NIF

SOLUBILITY IN WATER: VERY SOLUBLE APPEARANCE AND ODOR: WHITE DELIQUESCENT GRANULAR SOLID BITTER ALMOND ODOR

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10. STABILITY AND REACTIVITY:

STABILITY: UNSTABLE: STABLE: X

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG ACIDS AND OXIDIZERS. REACTS WITH ACIDS TO LIBERATE TOXIC AND FLAMMABLE HYDROGEN CYANIDE GAS. WATER OR WEAK ALKALINE SOLUTIONS CAN PRODUCE DANGEROUS AMOUNTS OF HYDROGEN CYANIDE IN CONFINED AREAS. CAN REACT WITH CARBON DIOXIDE IN ORDINARY AIR TO FORM HYDROGEN CYANIDE GAS.

HAZARDOUS DECOMPOSITION OF BY-PRODUCTS: EMITS TOXIC FUMES OF CYANIDE AND OXIDES OF NITROGEN WHEN HEATED TO DECOMPOSITION.

10. STABILITY AND REACTIVITY (cont):

HAZARDOUS POLYMERIZATION:

MAY OCCUR:

WILL NOT OCCUR: X

11. TOXICOLOGICAL INFORMATION:

LD50/LC50: ORAL RAT LD50: 6 mg/kg.

REPRODUCTIVE TOXICITY: INVESTIGATED AS A MUTAGEN, REPRODUCTIVE EFFECTOR.

IRRITANCY, SENSITIVITY: NIF

CARCINOGENICITY: NO NTP? IARC? OSHA?

POTENTIAL HEALTH EFFECTS: IN MOST CASES, CYANIDE POISONING CAUSES A DECEPTIVELY HEALTHY PINK TO RED COLOR. HOWEVER, IF A PHYSICAL INJURY OR LACK OF OXYGEN IS INVOLVED, THE SKIN COLOR MAY BE BLuish. REDDENING OF THE EYES AND PUPIL DILATION ARE SYMPTOMS OF CYANIDE POISONING. CYANOSIS (BLUE DISCOLORATION OF THE SKIN) TENDS TO BE ASSOCIATED WITH SEVERE CYANIDE POISONINGS.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE: THIS MATERIAL HAS AN ESTIMATED BIOCONCENTRATION FACTOR (BCF) OF LESS THAN 100. THIS MATERIAL IS NOT EXPECTED TO SIGNIFICANTLY BIOACCUMULATE.

ENVIRONMENTAL TOXICITY: THIS MATERIAL IS EXPECTED TO BE VERY TOXIC TO AQUATIC LIFE. THIS MATERIAL IS EXPECTED TO BE VERY TOXIC TO TERRESTRIAL LIFE.

13. DISPOSAL CONSIDERATIONS: OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS.

14. TRANSPORTATION INFORMATION:

PROPER SHIPPING NAME: RQ, POTASSIUM CYANIDE, SOLID

HAZARD CLASS: 6.1

UN/NA: UN1680

PACKING GROUP: I

15. REGULATORY INFORMATION: LISTED ON TSCA, SARA 311/312.

16. OTHER INFORMATION:

NFPA RATINGS: HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 0

The information herein is given in good faith but no warranty, expressed or implied, is made.