

DATE: 08/09/90
INDEX: 25900540100

ACCT: 818730-99
CAT NO: S71429

PAGE: 1
PO NBR: N/A

540
Gen. Science

PHENOLPHTHALEIN SOLUTIONS, ALCOHOLIC
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MATERIAL SAFETY DATA SHEET

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SUBSTANCE IDENTIFICATION

SUBSTANCE: **PHENOLPHTHALEIN SOLUTIONS, ALCOHOLIC**

TRADE NAMES/SYNONYMS:
SO-P-50; SO-P-62; ACC40133

OSHA RATINGS (SCALE 0-3): HEALTH=2 FIRE=3 REACTIVITY=0 PERSISTENCE=0
NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=3 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: 2-PROPANOL PERCENT: 44.0-99.0
CAS# 67-63-0

COMPONENT: PHENOPHTHALEIN PERCENT: 0.5-1.0
CAS# 77-09-8

COMPONENT: WATER PERCENT: 0-55.4

OTHER CONTAMINANTS: WATER

EXPOSURE LIMITS:

ISOPROPYL ALCOHOL (ISOPROPRANOL; 2-PROPANOL):
400 PPM (980 MG/M3) OSHA TWA; 500 PPM (1225 MG/M3) OSHA STEL
400 PPM (980 MG/M3) ACGIH TWA; 500 PPM (1225 MG/M3) ACGIH STEL
400 PPM NIOSH RECOMMENDED 10 HOUR TWA;
800 PPM NIOSH RECOMMENDED 15 MINUTE CEILING

SUBJECT TO SARA SECTION 313 ANNUAL TOXIC CHEMICAL RELEASE REPORTING

PHYSICAL DATA

DESCRIPTION: COLORLESS LIQUID BOILING POINT: NOT AVAILABLE
SPECIFIC GRAVITY: NOT AVAILABLE VAPOR PRESSURE: NOT AVAILABLE
EVAPORATION RATE: (ETHER = 1) >1 SOLUBILITY IN WATER: MISCIBLE
ODOR THRESHOLD: NOT AVAILABLE VAPOR DENSITY: NOT AVAILABLE

FIRE AND EXPLOSION DATA

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

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK.

VAPOR-AIR MIXTURES ARE EXPLOSIVE ABOVE FLASH POINT.

FLASH POINT: NOT AVAILABLE UPPER EXPLOSIVE LIMIT: NOT AVAILABLE

LOWER EXPLOSIVE LIMIT: NOT AVAILABLE FLAMMABILITY CLASS(OSHA): II

FIREFIGHTING MEDIA:

DRY CHEMICAL, CARBON DIOXIDE, HALON, WATER SPRAY OR ALCOHOL FOAM
(1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL FOAM
(1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

FIREFIGHTING:

MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. COOL FIRE-EXPOSED CONTAINERS WITH WATER FROM SIDE UNTIL WELL AFTER FIRE IS OUT. STAY AWAY FROM STORAGE TANK ENDS. FOR MASSIVE FIRE IN STORAGE AREA, USE UNMANNED HOSE HOLDER OR MONITOR NOZZLES, ELSE WITHDRAW FROM AREA AND LET FIRE BURN. WITHDRAW IMMEDIATELY IN

DATE: 08/09/90
INDEX: 25900540100

ACCT: 818730-99
CAT NO: S71429

PAGE: 2

PO NBR: N/A

CASE OF RISING SOUND FROM VENTING SAFETY DEVICE OR ANY DISCOLORATION OF STORAGE TANK DUE TO FIRE (1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800, 4, GUIDE PAGE 26).

EXTINGUISH ONLY IF FLOW CAN BE STOPPED. USE FLOODING AMOUNTS OF WATER AS FOG. SOLID STREAMS MAY BE INEFFECTIVE. COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING VAPORS; KEEP UPWIND.

TOXICITY

ISOPROPYL ALCOHOL (ISOPROPANOL, 2-PROPANOL):

IRRITATION DATA: 500 MG SKIN-RABBIT MILD; 15 MG EYE-RABBIT; 10 MG EYE-RABBIT MODERATE; 100 MG/24 HOURS EYE-RABBIT MODERATE.
TOXICITY DATA: 12,800 PPM/3 HOURS INHALATION-MOUSE LCLO; 16,000 PPM/4 HOURS INHALATION-RAT LCLO; 12,800 MG/KG SKIN-RABBIT LD50; 5272 MG/KG ORAL-MAN LDLO; 14,432 MG/KG ORAL-MAN TDLO; 3570 MG/KG ORAL-HUMAN LDLO; 223 MG/KG ORAL-HUMAN TDLO; 5045 MG/KG ORAL-RAT LD50; 3600 MG/KG ORAL-MOUSE LD50; 6410 MG/KG ORAL-RABBIT LD50; 4797 MG/KG ORAL-DOG LD50; 6000 MG/KG SUBCUTANEOUS-MOUSE LDLO; 6 MG/KG SUBCUTANEOUS-MAMMAL LDLO; 1088 MG/KG INTRAVENOUS-RAT LD50; 1509 MG/KG INTRAVENOUS-MOUSE LD50; 1184 MG/KG INTRAVENOUS-RABBIT LD50; 2735 MG/KG INTRAPERITONEAL-RAT LD50; 4477 MG/KG INTRAPERITONEAL-MOUSE LD50; 667 MG/KG INTRAPERITONEAL-RABBIT LD50; 2770 MG/KG UNREPORTED-MAN LDLO; MUTAGENIC DATA (RTECS); REPRODUCTIVE EFFECTS DATA (RTECS).

CARCINOGEN STATUS: HUMAN INADEQUATE EVIDENCE, ANIMAL INADEQUATE EVIDENCE (IARC GROUP-3). STRONG ACID MANUFACTURING PROCESS: KNOWN HUMAN CARCINOGEN (NTP); HUMAN SUFFICIENT EVIDENCE (IARC GROUP-1). WORKERS INVOLVED IN THE MANUFACTURE OF ISOPROPYL ALCOHOL BY THE STRONG-ACID PROCESS, INVOLVING THE FORMATION OF ISOPROPYL OILS, SHOWED AN INCREASE IN PARANASAL AND LARYNGEAL CANCERS.

LOCAL EFFECTS: IRRITANT- INHALATION, EYE.

ACUTE TOXICITY LEVEL: SLIGHTLY TOXIC BY INGESTION, DERMAL ABSORPTION.

TARGET EFFECTS: CENTRAL NERVOUS SYSTEM DEPRESSANT.

AT INCREASED RISK FROM EXPOSURE: PERSONS WITH PRE-EXISTING SKIN DISORDERS;

IMPAIRED LIVER, RENAL AND/OR PULMONARY FUNCTION.

ADDITIONAL INFORMATION: POTENTIATES THE EFFECT OF CARBON TETRACHLORIDE AND OTHER HEPATOTOXIC CHLORINATED ALIPHATIC HYDROCARBONS.

PHENOLPHTHALEIN:

TOXICITY DATA: 29 MG/KG ORAL-MAN TDLO; 500 MG/KG INTRAPERITONEAL-RAT LDLO.

CARCINOGEN STATUS: NONE.

ACUTE TOXICITY LEVEL: INSUFFICIENT DATA.

TARGET EFFECTS: NO DATA AVAILABLE.

HEALTH EFFECTS AND FIRST AID

INHALATION:

ISOPROPYL ALCOHOL (ISOPROPANOL, 2-PROPANOL):

IRRITANT/NARCOTIC. 12,000 PPM IMMEDIATELY DANGEROUS TO LIFE OR HEALTH.
ACUTE EXPOSURE- HUMAN SUBJECTS EXPOSED TO 400 PPM FOR 3-5 MINUTES HAD MILD IRRITATION OF THE NOSE AND THROAT. AT 800 PPM THE IRRITATION WAS NOT SEVERE BUT UNCOMFORTABLE. HIGHER CONCENTRATIONS MAY CAUSE EFFECTS AS DETAILED IN ACUTE INGESTION. THE LENGTH OF TIME REQUIRED TO PRODUCE DEEP NARCOSIS IN ANIMALS WAS INVERSELY PROPORTIONAL TO THE CONCENTRATION: THE ONSET OF DEEP NARCOSIS RANGED FROM 460 MINUTES AT 3250 PPM TO 100 MINUTES AT 24,500 PPM.

CHRONIC EXPOSURE- MICE SUBJECTED TO 10900 PPM ISOPROPYL ALCOHOL IN AIR FOR ABOUT 4 HOURS/DAY UNTIL THEY HAD ACCUMULATED 123 HOURS OF EXPOSURE WERE NARCOTIZED BUT SURVIVED. REVERSIBLE FATTY CHANGES WERE OBSERVED IN THE LIVER. MALE MICE EXPOSED TO EITHER 1000 OR 5000 PPM OF ISOPROPYL ALCOHOL VAPOR FOR 6 HOURS A DAY FOR 9 EXPOSURES EXHIBITED HYALINE DROPLET NEPHROPATHY. REPRODUCTIVE EFFECTS HAVE BEEN REPORTED IN ANIMALS. THERE HAS BEEN AN INCREASED INCIDENCE OF CANCER OF THE PARANASAL SINUSES, AND POSSIBLY OF THE LARYNX, IN THE MANUFACTURE OF ISOPROPYL ALCOHOL BY THE STRONG ACID PROCESS, INVOLVING THE FORMATION OF ISOPROPYL OILS. IT IS NOT CLEAR WHICH SUBSTANCES ARE RESPONSIBLE.

PHENOLPHTHALEIN:

ACUTE EXPOSURE- NO DATA AVAILABLE. CRYSTALS MAY BE IRRITATING.

CHRONIC EXPOSURE- NONE REPORTED IN HUMANS.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND BLOOD PRESSURE AND ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. ADMINISTRATION OF OXYGEN SHOULD BE PERFORMED BY QUALIFIED PERSONNEL. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

ISOPROPYL ALCOHOL (ISOPROPANOL, 2-PROPANOL):

NARCOTIC.

ACUTE EXPOSURE- CONTACT WITH THE SKIN MAY CAUSE SLIGHT IRRITATION. CONTACT DERMATITIS HAS BEEN REPORTED IN A FEW SENSITIVE INDIVIDUALS. SUBSTANCE MAY BE DERMALLY ABSORBED RESULTING IN SYSTEMIC TOXICITY AS DETAILED IN ACUTE INGESTION. TOXIC EFFECTS MAY BECOME MORE MARKED IF ABSORPTION AND INHALATION OCCUR CONCURRENTLY.

DATE: 08/09/90
INDEX: 25900540100

ACCT: 818730-99
CAT NO: S71429

PAGE: 3

PO NBR: N/A

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE DERMATITIS DUE TO THE DEFATTING ACTION ON THE SKIN. REPEATED AND PROLONGED EXPOSURE TO THE SKIN OF RABBITS CAUSED SLIGHT ERYTHEMA, DRYING, AND SUPERFICIAL DESQUAMATION.

PHENOLPHTHALEIN:

ACUTE EXPOSURE- NO DATA AVAILABLE. CRYSTALS MAY BE IRRITATING.
CHRONIC EXPOSURE- NONE REPORTED IN HUMANS.

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:

ISOPROPYL ALCOHOL (ISOPROPANOL; 2-PROPANOL):
IRRITANT.

ACUTE EXPOSURE- 400-800 PPM MAY CAUSE IRRITATION. IN RABBIT EYES, A DROP CAUSED MILD TRANSITORY INJURY AND A 50% AQUEOUS SOLUTION AFTER 3 MINUTES CAUSED MODERATE IRRITATION. CONTACT WITH A 70% SOLUTION CAUSED CONJUNCTIVITIS, IRITIS, AND CORNEAL OPACITY.

CHRONIC EXPOSURE- PROLONGED OR REPEATED EXPOSURE TO VAPORS MAY CAUSE CONJUNCTIVITIS.

PHENOLPHTHALEIN:

ACUTE EXPOSURE- NO DATA AVAILABLE. CRYSTALS MAY BE IRRITATING.
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:

ISOPROPYL ALCOHOL (ISOPROPANOL; 2-PROPANOL):
NARCOTIC.

ACUTE EXPOSURE- INGESTION MAY CAUSE ABDOMINAL PAIN, HEMATEMESIS, NAUSEA, VOMITING, AND HEMORRHAGE. CENTRAL NERVOUS SYSTEM DEPRESSION MAY OCCUR WITH HEADACHE, DIZZINESS, FLUSHING, INCOORDINATION, STUPOR, CONFUSION, HYPOTENSION, AREFLEXIA, AND REFRACTORY NARCOSIS. OLIGURIA FOLLOWED BY DIURESIS AND COMA MAY ALSO OCCUR. OTHER SYMPTOMS MAY INCLUDE HYPOGLYCEMIA, TENDERNESS AND EDEMA OF MUSCLES, AND ARRHYTHMIAS. VOMITING WITH ASPIRATION MAY CAUSE ASPIRATION PNEUMONIA. DEPRESSED RESPIRATION AND DEATH DUE TO RESPIRATORY PARALYSIS MAY OCCUR IN A FEW HOURS AFTER EXPOSURE. SEVERE AND PROLONGED SHOCK MAY LEAD TO SERIOUS OR FATAL RENAL DAMAGE AFTER SEVERAL DAYS. PATHOLOGIC FINDINGS HAVE INCLUDED EXTENSIVE HEMORRHAGIC TRACHEOBRONCHITIS, BRONCHOPNEUMONIA AND HEMORRHAGIC PULMONARY EDEMA.

CHRONIC EXPOSURE- NO ADVERSE EFFECTS RESULTED IN HUMANS FOLLOWING DAILY INGESTION OF 2.6 AND 6.4 MG/KG FOR 6 WEEKS. RATS THAT INGESTED 0.5 TO 10.0% ISOPROPYL ALCOHOL IN DRINKING WATER FOR 27 WEEKS SHOWED DECREASED BODY WEIGHT. PROLONGED ORAL ADMINISTRATION IN RABBITS PRODUCED ANESTHESIA AND DEATH. REPRODUCTIVE EFFECTS HAVE BEEN REPORTED IN ANIMALS.

PHENOLPHTHALEIN:

ACUTE EXPOSURE- ACUTE REACTIONS TO ORAL DOSES MAY INCLUDE EYELID EDEMA, CONJUNCTIVAL ECCHYMOSIS, PERSISTENT PIGMENTATION, AND WIDESPREAD SKIN REACTIONS WHICH MAY BE SEVERE. INGESTION OF PHENOLPHTHALEIN IN CHOCOLATE HAS CAUSED HYPOTHERMIA, HYPOTENSION, SEVERE ACIDOSIS, PULMONARY EDEMA, CEREBRAL EDEMA, OLIGURIA, COMA, AND DEATH.

CHRONIC EXPOSURE- PROLONGED OR REPEATED USE OF IRRITANT LAXATIVES MAY CAUSE SEVERE ENTERITIS WITH SYSTEMIC EFFECTS OF FAINTING, SKIN RASH, AND HEMORRHAGIC TENDENCIES.

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

REACTIVITY

REACTIVITY:

STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:

ISOPROPYL ALCOHOL (ISOPROPANOL; 2-PROPANOL):

ALUMINUM: DISSOLUTION IS EXOTHERMIC.

BARIUM PERCHLORATE: FORMATION OF EXPLOSIVE COMPOUND.

2-BUTANONE (METHYL ETHYL KETONE): ACCELERATES THE PEROXIDATION OF THE ALCOHOL.

CHROMIUM TRIOXIDE (GRANULAR): IGNITION.

COATINGS: MAY BE ATTACKED.

DIOXYGENYL TETRAFLUOROBORATE: IGNITION AT AMBIENT TEMPERATURES.

HYDROGEN + PALLADIUM (PARTICLES): IGNITION ON EXPOSURE TO AIR.

HYDROGEN PEROXIDE: FORMATION OF EXPLOSIVE COMPOUND.

KETONES: MARKEDLY INCREASES THE POSSIBILITY OF PEROXIDATION.

NITROFORM (TRINITROMETHANE): DISSOLVES LIBERATING HEAT AND POSSIBLY EXPLODING.

OLEUM: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.

OXIDIZERS (STRONG): FIRE AND EXPLOSION HAZARD.

OXYGEN (GAS): AUTOXIDATION, ON EXPOSURE TO LIGHT, RESULTS IN FORMATION OF

DATE: 08/09/90
INDEX: 25900540100

ACCT: 818730-99
CAT NO: S71429

PAGE: 4
PO NBR: N/A

KETONES AND POTENTIALLY EXPLOSIVE HYDROGEN PEROXIDE.
PHOSGENE: IN THE PRESENCE OF IRON SALTS, MAY EXPLODE.
PLASTICS: MAY BE ATTACKED.
POTASSIUM TERT-BUTOXIDE: IGNITION.
RUBBER: MAY BE ATTACKED.
SODIUM DICHROMATE + SULFURIC ACID: EXOTHERMIC REACTION WITH POSSIBLE
INCANDESCENCE.
SEE ALSO ALCOHOLS.

PHENOLPHTHALEIN:
ALKALOIDS: MAY BE UNSTABLE.

DECOMPOSITION:
THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE TOXIC OXIDES OF CARBON.

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

CONDITIONS TO AVOID

AVOID CONTACT WITH HEAT, SPARKS, FLAMES, OR OTHER SOURCES OF IGNITION. VAPORS
MAY BE EXPLOSIVE AND POISONOUS; DO NOT ALLOW UNNECESSARY PERSONNEL IN AREA.
DO NOT OVERHEAT CONTAINERS; CONTAINERS MAY VIOLENTLY RUPTURE AND TRAVEL A
CONSIDERABLE DISTANCE IN HEAT OF FIRE.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:
SHUT OFF IGNITION SOURCES. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. USE WATER
SPRAY TO REDUCE VAPORS. FOR SMALL SPILLS, TAKE UP WITH SAND OR OTHER
ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR LATER DISPOSAL. FOR LARGER
SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER DISPOSAL. NO SMOKING, FLAMES OR
FLARES IN HAZARD AREA. KEEP UNNECESSARY PEOPLE AWAY; ISOLATE HAZARD AREA AND
DENY ENTRY.

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE LOCAL EXHAUST OR GENERAL DILUTION VENTILATION TO MEET PUBLISHED
EXPOSURE LIMITS. 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 NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND
BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND
HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA).

CHEMICAL CARTRIDGE RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE(S) WITH A FULL
FACEPIECE.

GAS MASK WITH ORGANIC VAPOR CANISTER (CHIN-STYLE OR FRONT- OR BACK-MOUNTED
CANISTER) WITH A FULL FACEPIECE.

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.

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:

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

SUPPLIED-AIR RESPIRATOR WITH FULL FACEPIECE AND OPERATED IN 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 AND A
FACESHIELD TO PREVENT CONTACT WITH THIS SUBSTANCE.

DATE: 08/09/90
INDEX: 25900540100

ACCT: 818730-99
CAT NO: S71429

PAGE: 5

PO NBR: N/A

EMERGENCY WASH FACILITIES:

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

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