MATERIAL SAFETY DATA SHEET

MG INDUSTRIES
3 GREAT VALLEY PARKWAY
MALVERN, PENNSYLVANIA 19355

EMERGENCY CONTACT:
CHEMTREC
1-800-424-9300

SUBSTANCE IDENTIFICATION

SUBSTANCE: OXYGEN, COMPRESSED GAS CAS-NUMBER 7782-44-7

TRADE NAMES/SYNONYMS:
OXYGEN; DIOXYGEN; MOLECULAR OXYGEN; OXYGEN MOLECULE; PURE OXYGEN; STCC 4904350; UN 1072; O2; MGI12831

CHEMICAL FAMILY:
INORGANIC GAS

MOLECULAR FORMULA: O2

MOLECULAR WEIGHT: 31.9988

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

COMPONENTS AND CONTAMINANTS

COMPONENT: OXYGEN, COMPRESSED GAS PERCENT: 100.0
CAS# 7782-44-7

OTHER CONTAMINANTS: NONE

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

PHYSICAL DATA

DESCRIPTION: ODORLESS, COLORLESS, TASTELESS, GAS.

BOILING POINT: -297 F (-183 C) MELTING POINT: -361 F (-218 C)

SPECIFIC GRAVITY: 1.309 G/L @ 25 C VAPOR PRESSURE: 760 MMHG @ -183 C

SOLUBILITY IN WATER: 3.2% @ 25 C VAPOR DENSITY: 1.1

SOLVENT SOLUBILITY: SOLUBLE IN ALCOHOL.

VISCOSITY: 0.02075 CPS @ 25 C

FIRE AND EXPLOSION DATA

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

OXIDIZER: OXIDIZERS DECOMPOSE, ESPECIALLY WHEN HEATED, TO YIELD OXYGEN OR OTHER GASES WHICH WILL INCREASE THE BURNING RATE OF COMBUSTIBLE MATTER. CONTACT WITH EASILY OXIDIZABLE, ORGANIC, OR OTHER COMBUSTIBLE MATERIALS MAY RESULT IN IGNITION, VIOLENT COMBUSTION OR EXPLOSION.

CYLINDER MAY EXPLODE IN HEAT OF FIRE.

FIREFIGHTING MEDIA:
DRY CHEMICAL OR CARBON DIOXIDE
(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. APPLY COOLING WATER TO SIDES OF CONTAINERS THAT ARE EXPOSED TO FLAMES UNTIL WELL AFTER FIRE IS OUT. STAY AWAY FROM ENDS OF TANKS. FOR MASSIVE FIRE IN CARGO AREA, USE UNMANNED HOSE HOLDER OR MONITER NOZZLES; IF THIS IS IMPOSSIBLE, WITHDRAW FROM AREA AND LET FIRE BURN (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5, GUIDE PAGE 14).

EXTINGUISH USING AGENTS SUITABLE FOR TYPE OF SURROUNDING FIRE. COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER, APPLY FROM AS FAR A DISTANCE AS POSSIBLE.

TRANSPORTATION DATA

DEPARTMENT OF TRANSPORTATION HAZARD CLASSIFICATION 49-CFR 172.101:
NONFLAMMABLE GAS

DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS 49-CFR 172.101 AND SUBPART E:
OXIDIZER

DEPARTMENT OF TRANSPORTATION PACKAGING REQUIREMENTS: 49-CFR 173.302 AND 49-CFR 173.314
EXCEPTIONS: 49-CFR 173.306

TOXICITY

OXYGEN:
TOXICITY DATA: 100 PPH/14 HOURS INHALATION-HUMAN TCLO; MUTAGENIC DATA (RTECS); REPRODUCTIVE EFFECTS DATA (RTECS).
CARCINOGEN STATUS: NONE.
ACUTE TOXICITY LEVEL: INSUFFICIENT DATA.
TARGET EFFECTS: POISONING MAY AFFECT THE PULMONARY, CARDIOVASCULAR, AND NERVOUS SYSTEMS AND THE EYE.
ADDITIONAL DATA: TOXIC ACTION IS GREATLY ENHANCED BY EXERCISE OR BY PRESENCE OF MODERATE AMOUNTS OF CARBON DIOXIDE.

HEALTH EFFECTS AND FIRST AID

INHALATION:
OXYGEN:
ACUTE EXPOSURE- PURE OXYGEN, ESPECIALLY IF NOT PROPERLY HUMIDIFIED, MAY CAUSE MUCOUS MEMBRANE IRRITATION AND PULMONARY EDEMA AFTER 24 HOURS. AIR NORMALLY CONTAINS 20-21% OXYGEN. AS EXPOSURE TO HIGHER CONCENTRATIONS AND/OR GREATER THAN ATMOSPHERIC PRESSURE CONTINUES SYMPTOMS OF TOXICITY MAY DEVELOP AND INCREASE IN SEVERITY. RESPIRATORY SYSTEM EFFECTS MAY INCLUDE A PROGRESSIVE DECREASE IN VITAL CAPACITY, TIGHTNESS IN THE CHEST AND DISCOMFORT, COUGHING, CONGESTION, TRACHEOBRONCHITIS, PNEUMONIA, EDEMA, ATELECTASIS AND INCREASED DEPTH OF RESPIRATION, RAPID PANTING OR ASTHMA-LIKE ATTACKS, APNEA IN INSPIRATORY POSITION, FIBROBLASTIC PROLIFERATION, AND HYPERPLASIA OF ALVEOLAR CELLS. CARDIOVASCULAR SYSTEM EFFECTS MAY INCLUDE BRADYCARDIA, HYPERTHERMIA OR HYPOTHERMIA AND PERIPHERAL VASOCONSTRICTION. THE NERVOUS SYSTEM MAY BE AFFECTED WITH MOOD CHANGES, NAUSEA, DIZZINESS, SLOWING OF MENTAL PROCESSESS, MALAISE, HILARITY, APPREHENSION, PARESTHESIAS INCLUDING TINGLING OF FINGERS AND TOES, FASCICULATION OF THE LIPS AND FACE, MUSCULAR TWITCHING, VISUAL AND AUDITORY HALLUCINATIONS, GENERAL CONVULSIONS AND EPILEPTIC SEIZURES, LOSS OF CONSCIOUSNESS AND COLLAPSE. AT INCREASED ATMOSPHERIC PRESSURES, VISION MAY BE AFFECTED. SYMPTOMS MAY INCLUDE PHOTOPHOBIA, AMBLYOPIA, MYDRIASIS, BILATERAL PROGRESSIVE CONSTRICTION OF VISUAL FIELD, IMPAIRED CENTRAL VISION, CONSTRICTION OF RETINAL VASCULATURE, AND POSSIBLE LOSS OF VISION. HOWEVER, NO CHANGE IN THE VISUAL FIELDS OR VISUAL ACUITY WAS FOUND AFTER BREATHING PURE OXYGEN FOR FOUR AND ONE-HALF HOURS AT NORMAL ATMOSPHERIC PRESSURES. ANIMAL STUDIES INDICATE EXPOSURE TO OXYGEN UNDER HIGH PRESSURE HAS CAUSED HEMOLYTIC ANEMIA. IN PREGNANT WOMEN EXPOSED TO 100% OXYGEN FOR 20 MINUTES, THE RESPONSE WAS A FETAL CARDIAC RATE WHICH DECREASED AND BECAME VARIABLE.
CHRONIC EXPOSURE- INHALATION OF PURE OXYGEN FOR PERIODS UP TO 16 HOURS PER DAY FOR MANY DAYS AT ATMOSPHERIC PRESSURE HAS CAUSED NO OBSERVED INJURY TO MAN. ADMINISTRATION AT ATMOSPHERIC PRESSURES AT CONCENTRATIONS OF 60% AND 80% MAY BE FOLLOWED BY ADVERSE EFFECTS, INCLUDING SEVERE COUGH, ACUTE CHEST PAIN ASSOCIATED WITH A DECREASE IN VITAL CAPACITY, INTRA-ALVEOLAR EDEMA AND ATELECTASIS. IT IS POSSIBLE THAT PROLONGED LOW-LEVEL INJURY MAY PRODUCE SEVERE FIBROTIC CHANGES IN THE LUNGS. HOWEVER, AFTER A HUMAN WAS EXPOSED TO HIGH CONCENTRATIONS OF OXYGEN FOR 150 DAYS, SEVERE IRREVERSIBLE RETINAL ATROPHY OCCURRED. DOGS EXPOSED TO PURE OXYGEN FOR 48 HOURS WERE FOUND TO DEVELOP RETINAL AND CHOROIDAL DETACHMENTS. REPRODUCTIVE EFFECTS HAVE BEEN REPORTED IN ANIMAL STUDIES.

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:
OXYGEN:
ACUTE EXPOSURE- NO ADVERSE EFFECTS HAVE BEEN REPORTED FROM THE GAS. DUE TO RAPID EVAPORATION, THE LIQUID MAY CAUSE FROSTBITE WITH REDNESS, TINGLING AND PAIN OR NUMBNESS. IN MORE SEVERE CASES, THE SKIN MAY BECOME HARD AND WHITE AND DEVELOP BLISTERS.
CHRONIC EXPOSURE- NO ADVERSE EFFECTS HAVE BEEN REPORTED.

FIRST AID- IT IS UNLIKELY THAT EMERGENCY TREATMENT WILL BE REQUIRED. IF

ADVERSE EFFECTS OCCUR, GET MEDICAL ATTENTION.
IN CASE OF FROSTBITE, WARM AFFECTED SKIN IN WARM WATER AT A TEMPERATURE OF 107 F. IF WARM WATER IS NOT AVAILABLE OR IMPRACTICAL TO USE, GENTLY WRAP AFFECTED PART IN BLANKETS. ENCOURAGE VICTIM TO EXERCISE AFFECTED PART WHILE IT IS BEING WARMED. ALLOW CIRCULATION TO RETURN NATURALLY (MATHESON GAS, 6TH ED.). GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:
OXYGEN:
ACUTE EXPOSURE- MAY CAUSE IRRITATION IF NOT PROPERLY HUMIDIFIED. DUE TO RAPID EVAPORATION, THE LIQUID MAY CAUSE FROSTBITE WITH REDNESS, PAIN AND BLURRED VISION.
CHRONIC EXPOSURE- NO ADVERSE EFFECTS HAVE BEEN REPORTED.

FIRST AID- IMMEDIATELY WASH THE EYES WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). IF FROSTBITE IS PRESENT, WARM WATER MAY BE PREFERRED. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:
OXYGEN:
ACUTE EXPOSURE- INGESTION OF A GAS IS UNLIKLY. IF THE LIQUID IS SWALLOWED, FROSTBITE DAMAGE OF THE LIPS, MOUTH AND MUCOUS MEMBRANES MAY OCCUR.
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- IT IS UNLIKELY THAT EMERGENCY TREATMENT WILL BE REQUIRED. IF ADVERSE EFFECTS OCCUR, TREAT SYMPTOMATICALLY AND SUPPORTIVELY AND GET MEDICAL ATTENTION.

ANTIDOTE:
NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:
OXYGEN:
ACETALDEHYDE: RAPID OXIDATION PROGRESSING TO EXPLOSION.
ACETYLENE: MIXTURES OF THE GASES MAY EXPLODE ON HEATING OR COMPRESSION; THE LIQUIDS FORM A POWERFUL EXPLOSIVE.
POLY(ACRYLONITRILE-BUTADIENE): FORMS IMPACT-SENSITIVE MIXTURE WITH THE LIQUID.
SEC-ALCOHOLS: FORMS EXPLOSIVE PEROXIDES.
ALKALI METALS: IGNITION.
ALKALINE-EARTH METALS: IGNITION.
ALKALINE-EARTH PHOSPHIDES: INCANDESCENCE ON HEATING.
ALLYLIC COMPOUNDS: MAY FORM EXPLOSIVE PEROXIDES.
ALUMINUM BOROHYDRIDE: EXPLOSIVE REACTION.
AMMONIA: POSSIBLE EXPLOSION.
BERYLLIUM BOROHYDRIDE: EXPLOSIVE REACTION.
BORON ARSENOTRIBROMIDE: IGNITES ON CONTACT WITH THE GAS.
BORON TRICHLORIDE: VIGOROUS REACTION ON SPARKING.
BUTEN-3-YNE: FORMS EXPLOSIVE PEROXIDES.
CARBON: MAY IGNITE IN THE GAS; FORMS EXPLOSIVE MIXTURES WITH THE LIQUID.

CARBON DISULFIDE: POSSIBLE IGNITION.
CARBON MONOXIDE (LIQUID): FORMS EXPLOSIVE MIXTURE WITH THE LIQUID.
CHLOROTRIFLUOROETHYLENE: FORMS EXPLOSIVE PEROXIDES.
COMBUSTIBLE MATERIALS: THE FLAMMABILITY OF COMBUSTIBLE COMPOUNDS GREATLY INCREASES WITH AN INCREASE IN OXYGEN CONCENTRATION; SOME MATERIALS MAY BECOME SPONTANEOUSLY COMBUSTIBLE OR EXPLOSIVE. CONTACT OF COMBUSTIBLE COMPOUNDS WITH LIQUID OXYGEN IS LIKELY TO RESULT IN A DANGEROUS EXPLOSION.
CYANOGEN (LIQUID): FORMS EXPLOSIVE MIXTURE WITH THE LIQUID.
CYCLOHEXANE-1,2-DIONE BIS(PHENYLHYDRAZONE): FORMS EXPLOSIVE COMPOUND.
CYCLOOCTATETRAENE: MAY FORM EXPLOSIVE PEROXIDES.
DIBORANE: EXPLOSIVE MIXTURE ON HEATING.
DIBORON TETRAFLUORIDE: EXPLOSIVE MIXTURE.
DIMETHYLKETENE: FORMS EXPLOSIVE PEROXIDE.
DIMETHYL SULFIDE: EXPLOSIVE REACTION ABOVE 210 C.
DIOXANE: MAY FORM EXPLOSIVE PEROXIDES.
ETHERS: MAY FORM EXPLOSIVE PEROXIDES.
FLAMMABLE MATERIALS: THE FLAMMABILITY OF MATERIALS GREATLY INCREASES AS THE OXYGEN CONCENTRATION INCREASES; SOME COMPOUNDS MAY BECOME SPONTANEOUSLY COMBUSTIBLE OR EXPLOSIVE. CONTACT WITH LIQUID OXYGEN IS LIKELY TO RESULT IN DANGEROUS EXPLOSIONS.
FLUORINE + HYDROGEN: EXPLOSIVE MIXTURE.
HALOGENATED HYDROCARBONS: MANY HALOGENATED HYDROCARBONS IGNITE OR EXPLODE WITH THE GAS UNDER PRESSURE; CONTACT WITH THE LIQUID MAY RESULT IN A DANGEROUS EXPLOSION.
HYDRAZINE: FORMS EXPLOSIVE MIXTURES.
HYDROCARBONS: MIXTURES WITH THE GAS MAY IGNITE OR EXPLODE PARTICULARLY UNDER PRESSURE OR WHEN HEATED; CONTACT WITH THE LIQUID IS LIKELY TO RESULT IN A DANGEROUS EXPLOSION.
HYDROGEN: EXPLOSIVE MIXTURE, PARTICULARLY IN THE PRESENCE OF A CATALYST.
HYDROGEN SULFIDE: EXPLOSIVE MIXTURE.
LITHIATED DIALKYLNITROSAMINES: MAY FORM EXPLOSIVE COMPOUNDS.
LITHIUM HYDRIDE (POWDER): VERY POWERFUL EXPLOSIVE WITH THE LIQUID.
METALS: MANY METALS IGNITE OR EXPLODE IN THE GAS, PARTICULARLY IF HEATED OR IN POWDER FORM. CONTACT OF METAL POWDERS WITH THE LIQUID IS LIKELY TO RESULT IN A DANGEROUS EXPLOSION.
METAL HALIDES: IGNITION.
METAL HYDRIDES: IGNITION OR EXPLOSION.
METHANE (LIQUID): FORMS EXPLOSIVE MIXTURE WITH THE LIQUID.
METHOXYCYCLOOCTATETRAENE: FORMS EXPLOSIVE COMPOUND.
NICKEL CARBONYL: IGNITES OR EXPLODES AT LOW PRESSURE.
NITROGEN (LIQUID): EXPLOSIVE IF SUBJECTED TO RADIATION.
NON-METAL HYDRIDES: MAY IGNITE OR EXPLODE.
OXYGEN DIFLUORIDE: EXPLOSIVE MIXTURE.
PHENYLDICHLOROAMINE: EXPLOSIVE REACTION.
PHOSPHINE: FORMS EXPLOSIVE MIXTURE.
PHOSPHOROUS: VIGOROUS REACTION.
PHOSPHORUS TRIBROMIDE: EXPLOSIVE REACTION.
PHOSPHOROUS TRIFLUORIDE: EXPLOSIVE REACTION.
PHOSPHOROUS TRIOXIDE: IGNITION.
POLY(CYANOETHYLSILOXANE): FORMS IMPACT SENSITIVE MIXTURE WITH THE LIQUID.
POLY(DIMETHYLSILOXANE): FORMS IMPACT SENSITIVE MIXTURE WITH THE LIQUID.
POLYSTYRENE: FORMS IMPACT-SENSITIVE MIXTURE WITH THE LIQUID.
POLYMERS: CONTACT WITH THE LIQUID MAY RESULT IN RAPID, HAZARDOUS OXIDATION WITH POSSIBLE EXPLOSIONS.
POTASSIUM CARBONYL: VIOLENT REACTION.
POTASSIUM PEROXIDE: VIOLENT REACTION.
PROPYLENE OXIDE: EXPLOSIVE MIXTURE.
SILANE + CHLORINE: EXPLOSIVE MIXTURE.

SILANES: IGNITION OR EXPLOSION.
STYRENE: FORMS EXPLOSIVE PEROXIDE.
TEFLON (POLYTETRAFLUOROETHYLENE): IGNITES AT HIGH TEMPERATURE AND REDUCED PRESSURE.
TETRABORON DECAHYDRIDE: EXPLOSIVE MIXTURE.
TETRAFLUOROETHYLENE: FORMS EXPLOSIVE PEROXIDES.
TETRAFLUOROHYDRAZINE: EXPLOSION IN THE PRESENCE OF ORGANIC MATTER.
TETRAHYDROFURAN: FORMS EXPLOSIVE PEROXIDES.
TETRAPHOSPHORUS HEXAOXIDE: IGNITION.
TRIRHENIUM CHLORIDE: MAY FORM EXPLOSIVE CHLORINE OXIDES ON HEATING.
VINYL COMPOUNDS: MAY FORM EXPLOSIVE PEROXIDES.

DECOMPOSITION:
NONE HAZARDOUS.

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. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

STORAGE

STORE IN ACCORDANCE WITH 29 CFR 1910.104.

DISPOSAL

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 40 CFR 262, EPA HAZARDOUS WASTE NUMBER D001.
100 POUND CERCLA SECTION 103 REPORTABLE QUANTITY.

CONDITIONS TO AVOID

AVOID CONTACT WITH COMBUSTIBLE MATERIALS (WOOD, PAPER, FUEL, OILS, ETC); CONTACT MAY RESULT IN IGNITION OR EXPLOSION. DO NOT PERMIT DAMAGE OR OVERHEATING OF CONTAINERS. CONTENTS ARE UNDER PRESSURE; CONTAINERS MAY VIOLENTLY RUPTURE AND TRAVEL A CONSIDERABLE DISTANCE.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:
KEEP COMBUSTIBLES (WOOD, PAPER, OIL, ETC.) AWAY FROM SPILLED MATERIAL. STOP LEAD IF YOU CAN DO IT WITHOUT RISK. ISOLATE AREA UNTIL GAS HAS DISPERSED. KEEP UNNECESSARY PEOPLE AWAY; ISOLATE HAZARD AREA AND DENY ENTRY. STAY UPWIND, OUT OF LOW AREAS, AND VENTILATE CLOSED SPACES BEFORE ENTERING.

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE LOCAL EXHAUST OR GENERAL DILUTION VENTILATION SYSTEM.

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 CHEMICAL CARTRIDGE RESPIRATOR.

ANY GAS MASK WITH CANISTER PROVIDING PROTECTION AGAINST THE COMPOUND OF CONCERN (CHIN-STYLE OR FRONT- OR BACK-MOUNTED CANISTER).

ANY TYPE 'C' SUPPLIED-AIR RESPIRATOR OPERATED IN THE PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE OR CONTINUOUS-FLOW MODE.

ANY SELF-CONTAINED BREATHING APPARATUS..

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:
FOR THE GAS FORM, PROTECTIVE CLOTHING NOT REQUIRED.
IF CONTACT WITH THE LIQUID FORM IS POSSIBLE, EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE CLOTHING AND EQUIPMENT TO PREVENT SKIN FROM FREEZING.

GLOVES:
WEAR FULL PROTECTIVE, COLD INSULATING GLOVES.

EYE PROTECTION:
FOR THE GAS FORM EYE PROTECTION IS NOT REQUIRED BUT RECOMMENDED.
WHERE THERE IS ANY POSSIBILITY OF CONTACT WITH THE LIQUID FORM, EMPLOYEE MUST WEAR SPLASH-PROOF SAFETY GOGGLES AND A FACESHIELD TO PREVENT CONTACT WITH THIS SUBSTANCE. CONTACT LENSES SHOULD NOT BE WORN.

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

CREATION DATE: 05/07/90 REVISION DATE: 12/30/92

-ADDITIONAL INFORMATION-

THIS MSDS IS SUPPLIED PURSUANT TO OSHA REGULATIONS. OTHER GOVERNMENT REGULATIONS MUST BE REVIEWED FOR APPLICABILITY TO THIS PRODUCT. WE BELIEVE THE INFORMATION SOURCE IS RELIABLE AND THE INFORMATION IS ACCURATE AS OF THE DATE HEREOF. HOWEVER, ACCURACY OR COMPLETENESS IS NOT GUARANTEED AND NO WARRANTY OF ANY TYPE IS GRANTED. THE INFORMATION RELATES ONLY TO THIS SPECIFIC PRODUCT. IF COMBINED WITH OTHER MATERIALS, ALL COMPONENT PROPERTIES MUST BE CONSIDERED.