

SUNOX INC -- DRY ICE -- 6830-01-165-6174

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===== Product Identification =====

Product ID:DRY ICE
MSDS Date:10/10/1988
FSC:6830
NIIN:01-165-6174
MSDS Number: BVBLZ
=== Responsible Party ===
Company Name:SUNOX INC
Address:4236 STATESVILLE RD
Box:33871
City:CHARLOTTE
State:NC
ZIP:28233
Country:US
Info Phone Num:704-596-6262
Emergency Phone Num:704-596-6262
CAGE:6Z872
=== Contractor Identification ===
Company Name:SUNOX INC
Address:4236 STATESVILLE RD
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===== Composition/Information on Ingredients =====

Ingred Name:CARBON DIOXIDE
CAS:124-38-9
RTECS #:FF6400000
OSHA PEL:10000PPM; 30000 STEL
ACGIH TLV:5000 PPM; 30000 STEL

Ingred Name:MATLS TO AVOID:MAGNESIUM, ALUMINUM, TITANIUM/ZIRCONIUM),
THEIR HYDRIDES & MATLS LIKE DIETHYL MAGNESIUM, MOIST (ING 3)
RTECS #:9999999ZZ

Ingred Name:ING 2:CE

SIUM OXIDE/LITHIUM ACETYLIDE W/AMMONIA CAN IGNITE
IN CO*2 ATM. DRY ICE CAN FORM SHOCK SENSITIVE MIX WITH (ING 4)
RTECS #:9999999ZZ

Ingred Name:ING 3:SODIUM, POTASSIUM OR SODIUM-POTASSIUM ALLOY.
RTECS #:9999999ZZ

Ingred Name:EFTS OF OVEREXP:COULD RSLT IN FROSTBT/CRYOGENIC (FREEZE)
"BURNS." CNTCT W/LIQ/SOLID CAN PRDCE FROSTBT & FREEZE (ING 5)
RTECS #:9999999ZZ

Ingred Name:ING 5:BURNS. EFTS ARE CHANGE IN COLOR OF SKIN TO GRAY/WHITE
POSS FOLLOWED BY BLISTERING. CO*2 IS MOST POWERFUL (
ING 7)
RTECS #:9999999ZZ

Ingred Name:ING 6:CEREBRAL VASODIALTOR KNOWN. INHAL LG CONC CAUSES
RAPID CIRCULATORY INSUFFICIENCY LEADING TO COMA & DEATH. (ING 8)
RTECS #:9999999ZZ

Ingred Name:ING 7:CHRONIC, HARMFUL EFTS ARE NOT KNOWN FROM RPTD INHAL
OF LOW (3-5 MOLAR %) CONC.
RTECS #:9999999ZZ

Ingred Name:FIRST AID PROC:MED ASSISTANCE SHOULD BE SOUGHT IMMED.
SKIN:FROSTBT:FLUSH AFFECTED AREAS W/LUKEWARM WATER. DO (ING 10)
RTECS #:9999999ZZ

Ingred Name:ING 9:NOT USE HOT WATER. MD SHOULD
SEE PROMPTLY IF
CRYOGENIC "BURN" HAS RSLTD IN BLISTERING OF DERMAL SURF/DEEP (ING
11)
RTECS #:9999999ZZ

Ingred Name:ING 10:TISS FREEZING. PROMPT MED ATTN MANDATORY IN ALL
CASES OF OVEREXP. RESCUE PERS SHOULD BE EQUIPPED WITH (ING 12)
RTECS #:9999999ZZ

Ingred Name:ING 11:NIOSH/MSHA SELF-CONTAINED BREATHING APPARATUS.
RTECS #:9999999ZZ

Ingred Name:WASTE DISP METH:HVR/AIR. DO NOT PUT DRY ICE IN CLSD CNTNR
WHERE EVOLVED GAS CANNOT ESCAPE! REMOVE SCRAP SOLID (ING 14)
RTECS #:9999

999ZZ

Ingred Name:ING 13:("SNOW" OR "DRY ICE") TO HOOD W/FORCED VENT OR TO A
REMOTE OUTSIDE AREA. ALLOW SOLID TO SUBLIME.

RTECS #:9999999ZZ

Ingred Name:HNDLG/STOR PREC:WHICH OPEN FROM TOP HAVING LOOSE-FITTING
LIDS SO CO*2 VAPOR FROM SUBLIMATION OF SOLID MAY BE (ING 16)

RTECS #:9999999ZZ

Ingred Name:ING 15:ALLOWED TO ESCAPE INTO ATM. FOR ADDNL HNDLG & STOR
RECOM SEE CGA PAMPHLETS P-1 & G-6.

RTECS #:9999999ZZ

Ingred Name:OTHER PREC:W/MOST PLASTICS & ELASTOMERS. ALSO SEE CGA
PAM

PHLET G-6.3.

RTECS #:9999999ZZ

Ingred Name:OTHER PROT EQUIP:TEMP) TO PVNT FREEZE BURNS & FROSTBT IF
MORE THAN MOMENTARY CNTCT W/CO*2 AT LOW TEMP IS POSS.

RTECS #:9999999ZZ

===== Hazards Identification =====

LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER.

Routes of Entry: Inhalation:YES Skin:YES Ingestion:NO

Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO

Health Hazards Acute and Chronic:NERVOUS SYS CONTROL OF RESP IS
DEPENDENT ON CO*2 LEVEL B

REATHED IN AIR. BY REDUCING O*2 LEVEL IN

AIR, CO*2 CAN CAUSE SUFFOCATION. SYMP OF OVEREXP INCL HDCH, DIZZ,
SHORTNESS OF BREATH, MUSC WEAK, DROW & RINGING IN EARS. INHAL:LOW
CONC (3-5 MOLAR %) CAUSE INCR RESP & HDCH. 8-15 MOLAR % CONC CAUSE
HDCH, (EFTS OF OVEREXP)

Explanation of Carcinogenicity:NOT RELEVANT

Effects of Overexposure:HLTH HAZ:NAUS & VOMIT WHICH MAY LEAD TO UNCON
IF NOT MOVED TO OPEN AIR/GIVEN O*2. HIGH CONC CAUSE RAPID
CIRCULATORY INSUFFICIENCY LEADING TO CO

MA & DEATH. WHEN

REFRIGERATED LIQ CO*2 IS VAPORIZED THRU AN ORIFICE, IT CAN FORM
SOLID PARTICLES OF CO*2 ("SNOW"/"DRY ICE" PWDR). CONTINUOUS DERMAL
CNTCT W/COLD SNOW (ING 5)

Medical Cond Aggravated by Exposure:NONE SPECIFIED BY MANUFACTURER.

===== First Aid Measures =====

First Aid:INGEST:CALL MD IMMED. EYES:IMMED FLUSH W/POTABLE WATER FOR
MIN OF 15 MIN, SEEK ASSISTANCE FROM MD. INHAL:IF CONSCIOUS, ASSIST
TO UNCONTAMD AREA & INHALE FRES

H AIR. QUICK REMOVAL FROM AREA IS MOST IMPORTANT. IF UNCON, MOVE TO UNCONTAMD AREA, GIVE MOUTH-TO-MOUTH RESUSCITATION & SUPPLEMENTAL O*2. ASSURE THAT VOMITED MATL DOES NOT OBSTRUCT AIRWAY BY USE OF POSITIONAL DRAINAGE. (ING 9)

===== Fire Fighting Measures =====

Extinguishing Media:NONFLAMMABLE, INERT GAS.

Fire Fighting Procedures:USE NIOSH/MSHA APPRVD SCBA & FULL PROT EQUIP. USE WATER SPRAY TO COOL FIRE-EXPOS CNTNRS TO PVNT RUPTURE. MATL I S

NON-COMBUST. IT CAN BE USED AS (SUPDAT)

Unusual Fire/Explosion Hazard:WATER SPRAY IS NOT EFTIVE FOR USE ON FIRES INVOLVING CHEM THAT HAVE THEIR OWN O*2 SUPPLY (I.E. CELLULOSE NITRATE)/ON FIRES INVOLVING REACTIVE METALS (SUPDAT)

===== Accidental Release Measures =====

Spill Release Procedures:EVACUATE AREA OF MAJOR SPILL/RELS OF CO*2. NOTIFY SFTY PERS. PROVIDE VENT. CLEAN-UP PERS NEED SPECIAL TRAINING & PROT AGAINST CNTCT W/VERY COLD MATL/EXCESS IVE INHAL OF GASEOUS CO*2.

Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

===== Handling and Storage =====

Handling and Storage Precautions:SOLID CO*2 GENERALLY DELIVERED IN KRAFT-PAPER-WRAPPED BLOCKS WEIGHING APPROX 50 LBS & APPROX 1/2 CUBIC FT IN VOL. STORE IN INSULATED CNTNRS (ING 15)

Other Precautions:DRY CO*2 CAN BE HNDL W/MOST COMMON STRUCTURAL MATLS. MOIST CO*2 IS CORR BY ITS FORM OF CARBONIC ACID. FOR APPLICATNS 316,309 & 310 S

TAINLESS STEELS MAY BE USED AS WELL AS HASTELLOY A, B & C & MONEL. A T NORM TEMP, CO*2 IS COMPATIBLE (ING 17)

===== Exposure Controls/Personal Protection =====

Respiratory Protection:PROVIDE NIOSH/MSHA APPRVD SUPPLIED-AIR OR SELF-CONTAINED RESP FOR USE IN NON-ROUTINE/EMER SITUATIONS W/EXPOS ABOVE TLV. FULL FACEPIECE IS REQD FOR CONC > 10%. PROVIDE STANDBY PERSON(S) W/RESCUE EQUIP IF WORK REQD AT > 15% CO*2 IN AIR.

Ventilation:GENERAL AND LOCAL EXHAUST VENTILA

TION TO MEET TLV
REQUIREMENTS.

Protective Gloves: LOOSE FITTING, INSULATED GLOVES.

Eye Protection: ANSI APPROVED CHEM WORK GOGGLES (SUP DATA)

Other Protective Equipment: SFTY SHOES, SOLID CO² HNDLG "TONGS." MAY
REQ ADDNL PROT CLTHG (APRON, FSHLD, ETC WHICH ARE RESISTANT TO LOW
(ING 18)

Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER.

Supplemental Safety and Health

FIRE FIGHT PROC: FIRE EXTING AGENT PRIMARILY FOR ITS SMOTHERING EFT
(REDUCTION OF O² CONC TO PT WHERE IMMED ATM CA

NOT SUPPORT

COMBUST). EXPL HAZ: (SUCH AS POTASSIUM, SODIUM, MAGNESIUM,
ALUMINUM, TITANIUM & ZIRCONIUM) OR THEIR HYDRIDES AS THESE MATLS
CAN DECOMPOSE CARBON DIOXIDE. EYE PROT: W/FULL LNGTH FCSHIELD .

===== Physical/Chemical Properties =====

Boiling Pt: B.P. Text: -109F, -79C

Melt/Freeze Pt: M.P/F.P Text: -70F, -57C

Vapor Pres: 844.7 PSIA

Vapor Density: 0.1144

Solubility in Water: COEFFICIENT = 0.8704

Appearance and Odor: WHITE OPAQUE SOLID; COLORLESS, ODORLESS GAS.

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid: YES

EXPLO CAN OCCUR WHEN CONTACTS MIX OF SODIUM PEROXIDE

W/ALUMINUM/MAGNESIUM. REACTIVE METALS (SUCH AS ALKALI METALS (ING
2)

Stability Condition to Avoid: DECOMPOSES TO CO & O² WHEN HEATED ABOVE
1700C. WILL REACT W/ALKALINE MATLS TO FORM CARBONATES &
BICARBONATES.

Hazardous Decomposition Products: CARBON MONOXIDE. FORMS CARBONIC ACID
IN THE PRESENCE OF WATER.

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===== Disposal Considerations =====

Waste Disposal Methods: DISP MUST BE I/A/W FED, STATE & LOCAL REGS.

ALLOW GAS TO BLEED OFF AT MOD RATE/SOLID TO SUBLIME TO WELL VENT
AREA. INSULATED STOR CNTNR SHOULD BE IN AREA W/ADEQ VENT TO PVNT
ACCUM OF CO² VAPS ABOVE TWA. CO² VAP ARE APPROX 1 1/2 TIMES (ING
13)

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