

ORION MATERIAL SAFETY DATA SHEET

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I. PRODUCT IDENTIFICATION

PRODUCT NAME: ORION APPLICATION SOLUTION CARBON DIOXIDE BUFFER SOLUTION

CATALOG NO.: 950210 EFFECTIVE DATE: 08/01/91

HAZARDOUS SHIPMENT LABELING: DOT NONE IATA NONE

PREPARED BY: THOMAS F. FLYNN TITLE: QUALITY ASSURANCE CHEMIST

APPROVED BY: LYNN ORLOWITZ TITLE: DIRECTOR REGULATORY MATTERS

II. HAZARDOUS INGREDIENTS (IDENTITY INFORMATION)

HAZARDOUS COMPONENTS* SPECIFIC CHEMICAL IDENTITY: COMMON NAME(S)	CAS NO.	%	OSHA PEL	ACGIH TLV	LD 50MG/KG
**SODIUM CHLORIDE (NACL)	7647-14-5	5.8	NONE	NONE	3,000 (ORL-RAT)
CITRIC ACID (C6H8O7)	7-92-9	6.1	NONE	NONE	11,700 (ORL-RAT)
**SODIUM CITRATE (C6H5O7)	6132-04-3	17.6	NONE	NONE	5.21 (IRE-RBBT)
**DEIONIZED WATER (H2O)	7732-18-5	70.5	NONE	NONE	190,000 (IPR-MUS)

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III. PHYSICAL DATA

BOILING POINT 760 MM HG: 100 DEGREES C

FREEZING POINT: -20 DEGREES C

SPECIFIC GRAVITY (H2O = 1): 1.2

VAPOR PRESSURE @: NA

PH @ 25 DEGREES C: 4.5

SOLUBILITY IN WATER, % BY WT. @: MISCIBLE

VOLATILES, % BY WT.: NA\*

EVAPORATION RATE (BUTYL, ACETATE = 1)

VAPOR DENSITY (AIR = 1): NA

APPEARANCE AND ODOR: CLEAR, COLORLESS LIQUID

IV. FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT (TEST METHOD): NA

AUTOIGNITION TEMPERATURE: NA

FLAMMABLE LIMITS IN AIR, % BY VOLUME: LOWER: NA UPPER: NA

EXTINGUISHING MEDIA: ANY

SPECIAL FIRE-FIGHTING PROCEDURES: SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

V. REACTIVITY DATA

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STABILITY: STABLE

CONDITIONS TO AVOID: NONE

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZERS, METAL NITRATES, COPPER, ALUMINUM, ZINC

HAZARDOUS DECOMPOSITION PRODUCTS: MAY EMIT CORROSIVE FUMES DURING A FIRE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITION TO AVOID: EXCESSIVE HEAT AND FIRE.

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VI. HEALTH HAZARD DATA

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ROUTE(S) OF ENTRY: INHALATION? NO SKIN? YES INGESTION? YES

HEALTH HAZARDS (ACUTE AND CHRONIC)

ACUTE: MAY IRRITATE SKIN. CHRONIC: PROLONGED EXPOSURE MAY CAUSE DERMATITIS. LOW HAZARD FOR INHALATION IN THIS BUFFERED FORM.

CARCINOGENICITY: NOT FOUND ON THESE LISTS.

SIGNS AND SYMPTOMS OF EXPOSURE: RASHES, ITCHING, IRRITATED SKIN.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: CONJUNCTIVITIS, DERMATITIS.

EMERGENCY AND FIRST AID PROCEDURES: SKIN AND EYES: WASH OFF WITH WATER.

INTERNAL: DILUTE WITH WATER, DO NOT INDUCE VOMITING; CONSULT PHYSICIAN.

VII. PRECAUTIONS (SAFE HANDLING AND USE)

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

CLEAN UP SPILL AND SET ASIDE FOR WASTE DISPOSAL.

WASTE DISPOSAL METHOD:

CONSULT LOCAL REGULATIONS BEFORE DISPOSAL. OBSERVE ALL FEDERAL, STATE AND LOCAL LAWS.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:  
KEEP AWAY FROM OXIDIZERS, METALS, AND BASES. NFPA RATING: SCALE (0-4); HEALTH  
- 1, FIRE - 0, REACTIVITY - 0, SPECIFIC - 0.

OTHER PRECAUTIONS:  
SARA TITLE III: THE INGREDIENTS IN THIS PRODUCT ARE NOT FOUND ON ANY OF THE  
SARA LISTS. NOT FOUND ON CAL PROP 65 LISTING.

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VIII. CONTROL MEASURES  
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RESPIRATORY PROTECTION (SPECIFY TYPE): NONE

VENTILATION: LOCAL EXHAUST: NONE SPECIAL: NONE

MECHANICAL (GENERAL): NONE OTHER: NONE

PROTECTIVE GLOVES: YES EYE PROTECTION: SAFETY GLASSES

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: LAB COAT

WORK/HYGIENIC PRACTICES: EMERGENCY EYE WASH STATION SHOULD BE AVAILABLE.

\* CHEMICALS WHICH ARE NOT CLASSIFIED AS HAZARDOUS PER U.S. OSHA GUIDELINES  
(29CFR PARTS 1915.2 OR 1916.2) OR THE MASSACHUSETTS SUBSTANCE LIST  
(105CMR670.000 APPENDIX A) WILL NOT NECESSARILY BE LISTED ON THIS FORM EVEN  
THOUGH ONE OR MORE MAY BE A CONSTITUENT OF THIS PRODUCT.

NA\* NOT AVAILABLE OR NOT APPLICABLE.

\*\* NON-HAZARDOUS COMPONENT.

LIABILITY IS EXPRESSLY DISCLAIMED FOR ANY LOSS OR INJURY ARISING OUT OF THE USE  
OF THIS INFORMATION OR THE USE OF ANY MATERIALS DESIGNATED. SAFE USE OF THE  
MATERIALS IS THE RESPONSIBILITY OF THE USER.

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