

ORION MATERIAL SAFETY DATA SHEET

ORION RESEARCH INCORPORATED  
THE SCHRAFFT CENTER  
529 MAIN STREET  
BOSTON, MA 92129 USA  
TELEPHONE: 617-242-3900

I. PRODUCT IDENTIFICATION

PRODUCT NAME:  
ORION APPLICATION SOLUTION 10 PPM FLUORIDE/TISAB STANDARD

CATALOG NO.: 040908  
EFFECTIVE DATE: 4/6/88

HAZARDOUS SHIPMENT LABELING: DOT-NONE IATA-NONE

PREPARED BY: THOMAS F. FLYNN TITLE: SAFETY 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 LO MG/KG
SODIUM FLUORIDE (NAF)	7681-49-4	<0.01	NONE	NONE	75 (ORL-HUMN)
ACETIC ACID (CH3COOH)	64-19-7	0.7	10 PPM	25 MG/M3	308 (UNK-MAN)
CDTA	25637-70-1	0.2	NONE	NONE	NA
** DYE COLORING	NA	<0.01	NONE	NONE	NA
** DEIONIZED WATER AND NEUTRAL SALTS.	NA	99.0	NONE	NONE	NA

\* 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/ NOT APPLICABLE.

\*\* NON-HAZARDOUS COMPONENT.

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III. PHYSICAL DATA

BOILING POINT (760 MM HG): 100 C.  
SPECIFIC GRAVITY (H2O = 1): 1.02  
PH @ 25 C: (5.0 - 5.5).  
VOLATILES, % BY WT.: 3.8  
VAPOR DENSITY (AIR = 1): NA  
APPEARANCE AND ODOR: BLUE LIQUID, VINEGAR LIKE ODOR.  
FREEZING POINT: 0 C  
VAPOR PRESSURE @: NA  
SOLUBILITY IN WATER, % BY WT. @: MISCIBLE  
EVAPORATION RATE (BUTYL, ACETATE = 1): NA

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:  
CARBON DIOXIDE, DRY CHEMICAL, ALCOHOL FOAM.  
SPECIAL FIRE-FIGHTING PROCEDURES:  
WEAR SELF-CONTAINED BREATHING APPARATUS.  
UNUSUAL FIRE AND EXPLOSION HAZARDS:  
EMITS TOXIC FUMES IF HEATED TO DECOMPOSITION.

V. REACTIVITY DATA

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STABILITY: STABLE  
CONDITIONS TO AVOID: HEAT OR FLAME.

INCOMPATIBILITY (MATERIALS TO AVOID):  
STRONG OXIDIZERS (HNO<sub>3</sub>, CHROMIC ACID SODIUM PEROXIDE), CONTACT WITH STRONG  
CAUSTICS CAN CAUSE SPATTERING.

HAZARDOUS DECOMPOSITION PRODUCTS:  
TOXIC GASES SUCH AS CARBON MONOXIDE MAY BE RELEASED DURING A FIRE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.  
CONDITIONS TO AVOID: NA

VI. HEALTH HAZARD DATA

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

HEALTH HAZARDS (ACUTE AND CHRONIC):  
ACUTE: INGESTION MAY CAUSE NAUSEA, BREATHING DIFFICULTIES, AND DAMAGE TO  
STOMACH AND DIGESTIVE TRACT. LOW HAZARD FOR SKIN AND INHALATION.

CARCINOGENICITY: NTP? IARC MONOGRAPHS? OSHA REGULATED?  
NOT FOUND ON THESE LISTS.

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SIGNS AND SYMPTOMS OF EXPOSURE:  
IRRITATION OF RESPIRATORY TRACT, UPSET STOMACH OR NAUSEA, IRRITATION OF EYES,  
NOSE, THROAT.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:  
RESPIRATORY AILMENTS, PERSONS WITH SENSITIVE SKIN MAY BE AFFECTED.

EMERGENCY AND FIRST AID PROCEDURES:  
EYES AND SKIN: IRRIGATE WITH PLENTY OF WATER. INTERNAL: DILUTE WITH LARGE  
AMOUNTS OF 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:  
VACUUM UP AND WASH DOWN DRAIN WITH LARGE AMOUNTS OF WATER.

WASTE DISPOSAL METHOD:  
DILUTE NEUTRALIZED SOLUTION DOWN DRAIN WITH EXCESS WATER; OBSERVE ALL FEDERAL,  
STATE, AND LOCAL LAWS.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:  
KEEP AWAY FROM OXIDIZERS AND CAUSTICS. KEEP WELL SEALED AND STORE AT ROOM  
TEMPERATURE.

OTHER PRECAUTIONS:  
ALWAYS WASH HANDS THOROUGHLY WITH SOAP AND WATER AFTER WORKING WITH THIS  
MATERIAL.

VIII. CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE): NA

VENTILATION:  
 LOCAL EXHAUST-YES  
 MECHANICAL (GENERAL)-NO  
 SPECIAL-NO  
 OTHER-NO

PROTECTIVE GLOVES: YES

EYE PROTECTION: SAFETY GOGGLES.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: LAB COAT.

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

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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I. PRODUCT IDENTIFICATION

PRODUCT NAME	ORION APPLICATION SOLUTION	CATALOG NO.	EFFECTIVE DATE
	2 PPM FLUORIDE/TISAB STANDARD	040907	5/15/92

HAZARDOUS

SHIPMENT LABELLING	DOT	IATA	
	NONE	NONE	
PREPARED BY	THOMAS FLYNN	TITLE	QUALITY ASSURANCE CHEMIST
APPROVED BY	LYNN ORLOWIZ	TITLE	DIRECTOR REGULATORY MATTERS

II. HAZARDOUS INGREDIENTS (IDENTITY INFORMATION)

HAZARDOUS COMPONENTS*	CAS NO.	%	OSHA PEL	ACGIH	LD
SPECIFIC CHEMICAL IDENTITY:				TLV	LO MG/KG
COMMON NAME(S)					
SODIUM FLUORIDE (NAF)	7681-49-4	<.01	2.5MG/M3	2.5MG/M3	75 (ORL-HUMN)
ACETIC ACID (C2H4O2)	64-19-7	0.70	25MG/M3	25MG/M3	308 (UNK-MAN)
**SODIUM CHLORIDE (NACL)	7647-14-5	2.90	NONE	NONE	8,000 (ORL-RBT)
SODIUM ACETATE (C2H3NAO2)	127-09-3	4.10	NONE	NONE	1,300 (IVN-RBT)
FD&C RED NO. 40	*NA	<0.01	NONE	NONE	NA
TRANS-1,2-DIAMINO CYCLO- HEXANE TETRA ACETIC ACID (CDTA)	482-54-2	0.20	NONE	NONE	150 (IPR-MUS) LD50
**DEIONIZED WATER (H2O)	7732-18-5	92.07	NONE	NONE	629,000 (ORL-DOG)

III. PHYSICAL DATA

BOILING POINT 760 MM HG	100'C	FREEZING POINT	-0'C
SPECIFIC GRAVITY (H2O=1)	1.02	VAPOR PRESSURE @	NA*
PH@ 25	(5.0-5.5)	SOLUBILITY IN WATER,	% BY VOLUME WT. @ MISCIBLE
VOLATILES, % BY WT.		EVAPORATION RATE	(BUTYL ACETATE = 1) NA
VAPOR DENSITY (AIR=1)	3.8		
APPEARANCE AND ODOR	NA		
	RED LIQUID, VINEGAR-LIKE ODOR		

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (TEST METHOD)	N A	AUTOIGNITION TEMPERATURE	NA
FLAMMABLE LIMITS IN AIR,		LOWER	UPPER
% BY VOLUME:		NA	NA
EXTINGUISHING MEDIA			

CARBON DIOXIDE, DRY CHEMICAL, ALCOHOL FOAM.

SPECIAL FIRE-FIGHTING PROCEDURES  
 WEAR SELF-CONTAINED BREATHING APPARATUS.

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