

ORION MATERIAL SAFETY DATA SHEET

ORION RESEARCH INCORPORATED
THE SCHRAFFT CENTER
529 MAIN STREET, BOSTON, MA 02129 USA
TELEPHONE 617-242-3900

I. PRODUCT IDENTIFICATION

PRODUCT NAME: ORION ROSS REFERENCE ELECTRODE FILLING SOLUTION

CATALOG NO.: 810007 EFFECTIVE DATE: 11/18/91

HAZARDOUS DOT IATA
SHIPMENT LABELING: NONE NONE

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

APPROVED BY: LYNN ORLOWITZ TITLE: DIRECTOR REGULATORY AFFAIRS

II. HAZARDOUS INGREDIENTS (IDENTITY INFORMATION)

HAZARDOUS COMPONENTS*	CAS NO.	%	OSHA PEL	ACGIH TLV	LD 50 MG/KG
FD & C YELLOW #5	1934-21-0	.0002	NONE	NONE	12,750 (ORL-MUS)
FD & C RED #40	4548-52-2	.0002	NONE	NONE	524 (ORL-RAT)
POTASSIUM CHLORIDE (KCL) **	7447-40-7	22.3	NONE	NONE	2,500 (ORL-GPG)
TRITON-X-100 (C32H58O11)	9002-93-1	.001	NONE	NONE	1,800 (ORL-RAT) LDLO
DEIONIZED WATER (H2O) ** (KCL) **	7732-18-5	77.6	NONE	NONE	190,000 (IPR-MUS)

III. PHYSICAL DATA

BOILING POINT 750 MM HG: 105 DEGREES C

FREEZING POINT: -5 DEGREES C

VAPOR PRESSURE @ NA*

PH @ 25 DEGREES C: 1.11

SOLUBILITY IN WATER, % BY WT @: MISCIBLE

VAPOR DENSITY (AIR = 1): NA

APPEARANCE AND ODOR: ODORLESS, ORANGE LIQUID

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IV. FIRE AND EXPLOSION HAZARD DATA

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: NONE, THIS SOLUTION IS NON-FLAMMABLE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

V. REACTIVITY DATA

STABILITY: STABLE CONDITIONS TO AVOID: NONE
INCOMPATIBILITY (MATERIALS TO AVOID): NA, SUITABLE FOR GENERAL STORAGE.
HAZARDOUS DECOMPOSITION PRODUCTS: NA
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR CONDITION TO AVOID NA

VI. HEALTH HAZARD DATA

ROUTE(S) OF ENTRY: INHALATION? NO SKIN? NO INGESTION? NO
HEALTH HAZARDS (ACUTE AND CHRONIC): NOT A CHRONIC OR ACUTE HAZARD FOR ALL ROUTES OF EXPOSURE; HOWEVER, AN ELECTROLYTE IMBALANCE MIGHT OCCUR IF SWALLOWED.
CARCINOGENICITY: NTP? NOT FOUND IARC MONOGRAPHS? FD & C RED #40 ANIMAL POSITIVE OSHA REGULATED? NOT FOUND
SIGNS AND SYMPTOMS OF EXPOSURE: ITCHING OF SKIN, IRRITATION OF EYES IF ALLOWED TO COME IN DIRECT CONTACT.
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: WILL CAUSE STINGING IN AN OPEN CUT.
EMERGENCY AND FIRST AID PROCEDURES: WASH OFF SKIN, IRRIGATE EYES WITH WATER.

VII. PRECAUTIONS (SAFE HANDLING AND USE)

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
WASH DOWN DRAIN WITH WATER.
WASTE DISPOSAL METHOD:
WASH DOWN DRAIN WITH WATER. OBSERVE ALL FEDERAL, STATE, AND LOCAL LAWS FOR WASTE DISPOSAL.

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PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
NONE, PRODUCT IS A LOW HAZARD. NFPA RATING: SCALE (0-4); HEALTH - 0, FIRE - 0, REACTIVITY - 0, SPECIFIC - NONE.

OTHER PRECAUTIONS:
KEEP CLOSURE SEALED AND STORE AT ROOM TEMPERATURE TO PROTECT PRODUCT INTEGRITY. NOT FOUND ON CAL. PROP. 65 OR SARA TITLE III LIST. KCI IS LISTED IN EPA'S TSCA INVENTORY.

VIII. CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE) NO
VENTILATION LOCAL EXHAUST: NO SPECIAL: NO
 MECHANICAL (GENERAL): NO OTHER: NO
PROTECTIVE GLOVES: YES, RUBBER EYE PROTECTION: SAFETY GLASSES
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: NO
WORK/HYGIENIC PRACTICES: WASH OFF HANDS AFTER WORKING WITH THIS PRODUCT.

* 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.

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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SPECIFIC CHEMICAL IDENTITY					
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FD & RED #40	4648-52-2	.0002	NONE	NONE	524 (ORL-RAT)
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TRITON-X-100 (C32H58O11)	9002-93-1	.001	NONE	NONE	1,800 LDLO (ORL-RAT)
**DEIONIZED WATER (H2O)	7732-18-5	89.8	NONE	NONE	190,000 (IPR-MUS)

III. PHYSICAL DATA

BOILING POINT(750MMHG): 105C FREEZING POINT: -5 C
SPECIFIC GRAVITY(H2O=1): 1.11 VAPOR PRESSURE: NA*
PH @ 25 C: (5.8 - 8.0) SOLUBILITY IN H2O, % BY WT: MISCIBLE
VOLATILES, % BY WT: NA EVAPORATION RATE(BUAC=1): NA
VAPOR DENSITY(AIR=1): NA
APPEARANCE AND ODOR: ODORLESS, ORANGE LIQUID.

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (TEST METHOD): NA
AUTOIGNITION TEMPERATURE: NA
FLAMMABLE LIMITS IN AIR, % BY VOLUME: LEL: NA UEL: NA
EXTINGUISHING MEDIA: ANY

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(SECTION IV. CONTINUED...)

SPECIAL FIRE-FIGHTING PROCEDURES: NONE, THIS SOLUTION IS NON-FLAMMABLE.

UNUSUAL FIRE & EXPLOSION HAZARDS: NONE.

V. REACTIVITY DATA

STABILITY: STABLE
CONDITIONS TO AVOID: NONE.

INCOMPATIBILITY (MATERIALS TO AVOID): NA, SUITABLE FOR GENERAL STORAGE.

HAZARDOUS DECOMPOSITION PRODUCTS: NA.

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

VI. HEALTH HAZARD DATA

ROUTE(S) OF ENTRY:

HEALTH HAZARDS (ACUTE & CHRONIC):
NOT A CHRONIC OR ACUTE HAZRD FOR ALL ROUTES OF EXPOSURE; HOWEVER, AN
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NFPA RATING: SCALE(0-4); HEALTH - 0, FIRE - 0, REACTIVITY - 0,
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OTHER PRECAUTIONS:
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TSCA INVENTORY.

VIII. CONTROL MEASURES

RESPIRATORY PROTECTION(SPECIFIC TYPE): NA

VENTILATION: NA

PROTECTIVE GLOVES: RUBBER.

EYE PROTECTION: SAFETY GLASSES.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: NONE.

WORK/HYGIENIC PRACTICES: WASH OFF HANDS AFTER WORKING WITH THIS PRODUCT.

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