I. PRODUCT IDENTIFICATION

PRODUCT NAME: ORION APPLICATION SOLUTION PH 10.01 BUFFER

CATALOG NO. 910110

EFFECTIVE DATE: 07/20/93

HAZARDOUS SHIPMENT LABELING: DOT: NA IATA: NA

PREPARED BY: QUALITY ASSURANCE CHEMIST

APPROVED BY: LYNN ORLOWITZ DIRECTOR REGULATORY MATTERS

II. HAZARDOUS INGREDIENTS (IDENTIFY INFORMATION)

<table>
<thead>
<tr>
<th>HAZARDOUS COMPONENTS*</th>
<th>CAS NO.</th>
<th>%</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>LD 50 MG/KG</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM BICARBONATE (NAHCO3)</td>
<td>144-55-8</td>
<td>0.209</td>
<td>NONE</td>
<td>NONE</td>
<td>4220 (ORL-RAT)</td>
</tr>
<tr>
<td>SODIUM CARBONATE (NA2CO3)</td>
<td>497-19-8</td>
<td>0.264</td>
<td>NONE</td>
<td>NONE</td>
<td>117 (PR-MUS)</td>
</tr>
<tr>
<td>METHYLPARABEN (CGH8O3)</td>
<td>99-76-3</td>
<td>0.001</td>
<td>NONE</td>
<td>NONE</td>
<td>NA</td>
</tr>
<tr>
<td>FD&amp;C BLUE (C37H36N2O8S3*2NA)</td>
<td>384445-9</td>
<td>0.0005</td>
<td>NONE</td>
<td>NONE</td>
<td>5.5 G/KG (SEN-RAT) LDLO</td>
</tr>
<tr>
<td>** DEIONIZED WATER (H2O)</td>
<td>7732-18-5</td>
<td>99.526</td>
<td>NONE</td>
<td>NONE</td>
<td>190,000 (PR-MUS)</td>
</tr>
</tbody>
</table>

III. PHYSICAL DATA

BOILING POINT 750 MM HG: 100 DEGREES C

FREEZING POINT: 0 DEGREES C

SPECIFIC GRAVITY (H2O=1): 1.0

VAPOR PRESSURE @: NA

PH @ 25 DEGREES C: 10.01

SOLUBILITY IN WATER, % BY WT @: MISCIBLE
VOLATILES, % BY WT.: NA
EVAPORATION RATE (BUTYL, ACETATE = 1): NA
VAPOR DENSITY (AIR = 1): NA
APPEARANCE AND ODOR: LIGHT BLUE, ODORLESS LIQUID

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (TEST METHOD): NOT FLAMMABLE
AUTOIGNITION TEMPERATURE: NA
FLAMMABLE LIMITS IN AIR, % BY VOLUME: LOWER: NA UPPER: NA
EXTINGUISHING MEDIA: WATER, CO2, DRY CHEMICAL, FOAM OR SPRAY
SPECIAL FIRE-FIGHTING PROCEDURES: NONE, NON-FLAMMABLE
UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

V. REACTIVITY DATA

STABILITY: STABLE
CONDITIONS TO AVOID: NONE
INCOMPATIBILITY (MATERIALS TO AVOID): NAK ALLOY, NH4H2PO4, AL, P2O5, H2SO4
HAZARDOUS DECOMPOSITION PRODUCTS: CO2 UPON HEATING TO DECOMPOSITION
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR
CONDITION TO AVOID: NONE

VI. HEALTH HAZARD DATA

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

HEALTH HAZARDS (ACUTE AND CHRONIC):
ACUTE: THIS SOLUTION IS CONSIDERED NON-HAZARDOUS DUE TO THE LOW LEVELS OF SALT PRESENT. CHRONIC: POSSIBLE IRRITATION OF SKIN UPON PROLONGED EXPOSURE.
CARCINOGENICITY: NTP? NOT FOUND  IARC MONOGRAPHS?*** (ANIMAL POSITIVE)
OSHA REGULATED? NOT FOUND

SIGNS AND SYMPTOMS OF EXPOSURE: SKIN IRRITATION
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: COULD AGGRAVATE DISEASES OF THE SKIN.
EMERGENCY AND FIRST AID PROCEDURES: WASH OFF CONTACT AREA WITH WATER. IF INGESTED, GIVE LARGE AMOUNTS OF WATER. CONTACT PHYSICIAN.

VII. PRECAUTIONS (SAFE AND HANDLING AND USE)

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: CLEAN UP AND SET ASIDE FOR DISPOSAL.
WASTE DISPOSAL METHOD: CONSULT FEDERAL, STATE AND LOCAL LAWS FOR PROPER DISPOSAL.
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
SUITABLE FOR ANY GENERAL HANDLING AND STORAGE. NFPA RATING: SCALE (0-4);
HEALTH - 1, FIRE - 0, REACTIVITY-0, SPECIFIC-NONE.

OTHER PRECAUTIONS:
FD&C BLUE NO. 1 IS LISTED ON CAL PROP 65

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VIII. CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE): NONE

VENTILATION: LOCAL EXHAUST: NO SPECIAL: NO

VENTILATION: MECHANICAL (GENERAL): NO OTHER: NO

PROTECTIVE GLOVES: YES EYE PROTECTION: SAFETY GLASSES

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: NO

WORK/HYGIENIC PRACTICES: NO EATING OR DRINKING WHILE 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

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