OXALIC ACID, A219500

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: OXALIC ACID, A219500
Manufacturer Name: FISHER SCIENTIFIC, CHEMICAL DIV.
Address:
1 REAGENT LANE
City: FAIR LAWN
State: NJ
Zip: 07410
Country: US
Business Phone: 201-796-7100 OR 201-796-7523
For information in North America, call: 201-796-7100 OR 201-796-7523
Health Phone: 201-796-7100/800-424-9300(CHMTRC)
Manufacturer MSDS Creation Date:
01/04/1991

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS#</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>OXALIC ACID</td>
<td>144-62-7</td>
<td>100</td>
</tr>
</tbody>
</table>

RTECS:
RO2450000

OSHA PEL TWA: 1 MG/M3; 2 MG/M3 STEL
ACGIH TLV TWA: 1 MG/M3; 2 MG/M3 STEL
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ; Ozone Depleting Chemical: N ;

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EfTSt</strong> of</td>
<td></td>
</tr>
<tr>
<td>OVEREXP;</td>
<td></td>
</tr>
<tr>
<td>IRREVERSIBLE EYE</td>
<td></td>
</tr>
<tr>
<td>DMG.</td>
<td></td>
</tr>
<tr>
<td>INGEST;</td>
<td></td>
</tr>
<tr>
<td>CONC DOSES</td>
<td></td>
</tr>
<tr>
<td>CAUSE</td>
<td></td>
</tr>
<tr>
<td>SEVERE</td>
<td></td>
</tr>
<tr>
<td>IRIT OF MUC</td>
<td></td>
</tr>
<tr>
<td>MEMB</td>
<td></td>
</tr>
<tr>
<td>OF</td>
<td></td>
</tr>
<tr>
<td>GI TRACT;</td>
<td></td>
</tr>
<tr>
<td>IMMED</td>
<td></td>
</tr>
<tr>
<td>SOUR (ING 3)</td>
<td></td>
</tr>
</tbody>
</table>

RTECS:
99999999ZZ

OSHA PEL TWA: N/K
ACGIH TLV TWA: N/K
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ;

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ING 2; OR BITTER TASTE,</td>
<td>N/K</td>
</tr>
<tr>
<td>BURNING, PAIN &amp; DFCLTY</td>
<td></td>
</tr>
<tr>
<td>SWALLOWING, VOMITING,</td>
<td></td>
</tr>
<tr>
<td>NAUSEA, DIARRHEA, BLOODY</td>
<td></td>
</tr>
</tbody>
</table>
### RTECS:
9999999ZZ
OSHA PEL TWA: N/K
ACGIH TLV TWA: N/K
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ;

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ING 3 &amp; DEATH FROM GI INJURY &amp; SHOCK, SYSTEMIC EFTS INCLUDE SHOCK, HYPTENSION, HYPOCALCemia W/RESP/NEURO/ (ING 5)</td>
<td>N/K</td>
</tr>
</tbody>
</table>

### RTECS:
9999999ZZ
OSHA PEL TWA: N/K
ACGIH TLV TWA: N/K
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ;

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ING 4: CARDIOVASCULAR, MUSCLE EFTS, COLLAPSE, COMA, CONVULSIONS. KIDNEY DAMAGE. CHRONIC: INHAL: RPTD INHAL OF HOT (ING 6)</td>
<td>N/K</td>
</tr>
</tbody>
</table>

### RTECS:
9999999ZZ
OSHA PEL TWA: N/K
ACGIH TLV TWA: N/K
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ;

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ING 5: OXALIC ACID FUMES RESULTED IN WT LOSS, CHRONIC INFLAMMATION OF UPPER RESP TRACT &amp; RENAL IMPAIRMENT. (ING 7)</td>
<td>N/K</td>
</tr>
</tbody>
</table>

### RTECS:
9999999ZZ
OSHA PEL TWA: N/K
ACGIH TLV TWA: N/K
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ;

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ING 6: SKIN: PRINGD/RPTD EXPOS MAY CAUSE DERM,</td>
<td>N/K</td>
</tr>
<tr>
<td>Chemical Name</td>
<td>Percent</td>
</tr>
<tr>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>ING 7: FINGERNAILS &amp; GANGRENOUS LESIONS CHARACT BY CRACKING, FISSURING &amp; SLOW-HEALING ULCERS. EYE: EFTS DEPEND ON (ING 9)</td>
<td>N/K</td>
</tr>
<tr>
<td>ING 8: CONC &amp; DURATION OF EXPOS. CNCT W/CORR SUBSTANCES MAY RESULT IN CONJUNCT/EFTS SIMILAR TO ACUTE EXPOSURE. (ING 10)</td>
<td>N/K</td>
</tr>
<tr>
<td>ING 9: INGEST: MAY RESULT IN DEPOSITS OF CALCIUM OXALATE IN KIDNEY AND BRAIN W/EFTS ON CARDIAC &amp; NERVOUS TISSUES.</td>
<td>N/K</td>
</tr>
<tr>
<td>FIRST AID PROC: GET MD IMMED. INGEST: PRECIPITATE</td>
<td>N/K</td>
</tr>
</tbody>
</table>
OXALATE BY GIVING CALCIUM IN ANY FORM ORALLY, SUCH AS MILK, (ING 12)

RTECS:
9999999ZZ
OSHA PEL TWA: N/K
ACGIH TLV TWA: N/K
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ;

<table>
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<th>Chemical Name</th>
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<tbody>
<tr>
<td>ING 11: LIME WATER, CHALK, CALCIUM GLUCONATE, CALCIUM CHLORIDE/CALCIUM LACTATE. DO NOT USE GASTRIC LAVAGE/EMESIS (ING 13)</td>
<td>N/K</td>
</tr>
</tbody>
</table>

RTECS:
9999999ZZ
OSHA PEL TWA: N/K
ACGIH TLV TWA: N/K
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ;

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</thead>
<tbody>
<tr>
<td>ING 12: IF TISS CORR HAS OCCURRED. DISSOLVE TO 0.2 (2 TSPNS) OF CALCIUM LACTATE IN LAVAGE/EMESIS FLUIDS. (ING 14)</td>
<td>N/K</td>
</tr>
</tbody>
</table>

RTECS:
9999999ZZ
OSHA PEL TWA: N/K
ACGIH TLV TWA: N/K
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ;

<table>
<thead>
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<th>Chemical Name</th>
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</thead>
<tbody>
<tr>
<td>ING 13: ANTIDOTE: GIVE 10G CALCIUM GLUCONATE, 10 ML SLOWLY INTRAVENOUSLY &amp; REPEAT IF SYMPTOMS PERSIST.</td>
<td>N/K</td>
</tr>
</tbody>
</table>

RTECS:
9999999ZZ
OSHA PEL TWA: N/K
ACGIH TLV TWA: N/K
ACGIH STEL/Ceiling: N/P
Comments:
Other REC Limits: N/K ;

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPILL PROC: AHEAD OF SPILL FOR LATER DISPOSAL. KEEP</td>
<td>N/K</td>
</tr>
</tbody>
</table>
SECTION 3 : HAZARDS IDENTIFICATION

Applies to all Ingredients:

Route of Exposure:
  Inhalation: YES Skin: YES Ingestion: YES

Potential Health Effects:
  CORR/NEPHROTOXIN. 500 MG/M3 IDLH. ACUTE: INHAL:DUST/VAPS MAY CAUSE IRRIT
  & ULCERATION OF MUC MEMB OF UPPER RESP TRACT, SEVERE HDCH, CHRONIC
  COUGH, NOSEBLEEDS, SHORT OF BREATH, RPTD VOM, BACKACHE, WT LOSS, MUSC
  IRRIT, NERVOUS, ANEMIA, ALBUMINURIA & PROSTRATION. IF SUFFICIENT AMTS
  ABSORBED, RENAL IMPAIRMENT (EFTS OF OVEREXP

Carcinogenicity:
  NOT RELEVANT

OSHA Designation: NO
NTP Designation: NO
IARC Designation: NO

Signs/Symptoms:
  HLTH HAZ: MAY OCCUR. SKIN: CNTCT W/CRYSTALS/ SOLN MAY CAUSE SEVERE IRRIT
  W/TINGLING, PAIN, REDNESS & BURNS. IF SUFFICIENT AMTS ABSORBED, SYMPS MAY
  OCCUR AS IN ACUTE INGEST. EYE: DIRECT CNTCT MAY CAUSE SEV ERE IRRIT
  W/REDNESS, PAIN, BURNS, BLURRED VISION & REVERSIBLE CORNEAL DMG. PRLNGD
  CNTCT W/SOLN MAY CAUSE (ING 2)

Aggravation of Pre-Existing Conditions:
  PERSONS W/CHRONIC RESPIRATORY, KIDNEY, EYE OR SKIN DISEASE OR CONVULSIVE
  DISORDERS.

LD 50 LC 50 Mixture
LD50: (ORAL, RAT) 375 MG/KG.

SECTION 4 : FIRST AID MEASURES

First Aid
  INHAL: REMOVE TO FRESH AIR IMMED. IF BRTHG
  STOPPED, GIVE ARTF RESP. GET MD IMMED. SKIN: REMOVE
  CONTAMD CLTHG & SHOES IMMED. WASH AFFECTED AREA
  W/SOAP/MILD DETERGENT & LG AMTS OF WATER (AT
  LEAST 15-20 MIN ). IF CHEM BURN, COVER
  W/STERILE, DRY DRESSING. BANDAGE SECURE, NOT TOO
  TIGHTLY, GET MD IMMED. EYE: WASH IMMED W/LG AMTS
  OF WATER LIFTING LIDS, AT LEAST 15-20 MIN. COVER
  W/STERILE BANDAGES, (ING 11)
SECTION 5 : FIRE FIGHTING MEASURES

Flash Point: N/K
Flash Point Method: N/P
Upper Flammable or Explosive Limit: N/K
Lower Flammable or Explosive Limit: N/K
Auto Ignition Temperature: N/A
Extinguishing Media:
- DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR REGULAR FOAM. LARGER FIRES: WATER SPRAY, FOG OR REGULAR FOAM.

Fire Fighting Instructions:
- WEAR NIOSH/MSHA APPRVD SCBA & FULL PROT EQUIP (FP N). MOVE CNTNRS FROM FIRE AREA IF CAN BE DONE W/OUT RISK. APPLY COOLING WATER TO SIDES OF CNTNRS (SUPP DATA)

Unusual Fire Hazards:
- SLIGHT FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Leak Response:
- DO NOT TOUCH SPILLED MATL. STOP LEAK IF CAN BE DONE W/OUT RISK. SML: TAKE UP W/SAND/OTHER ABSORB MATL & PLACE INTO CNTNRS FOR LATER DISP. SML, DRY: W/CLEAN SHOVEL PLACE MATL INTO CLEAN, DRY CNTNR & COVER. MOVE CNTNRS FROM SPILL AREA.
- LG: DIKE FAR (ING 15)

Other Precautions:
- SEPARATE FROM OXIDIZING MATERIALS. STORE AWAY FROM INCOMPATIBLE SUBSTANCES. MAY BURN BUT DOES NOT IGNITE READILY. FLAMMABLE. POISONOUS GASES MAY ACCUMULATE IN TANKS & HOPPER CARS. MAY IGNITE COMBUSTIBLES (WOOD, PAPER, OIL, ETC.).

Neutralizing Agent
- NONE SPECIFIED BY MANUFACTURER.

SECTION 7 : HANDLING and STORAGE

Handling:
- PROTECT AGAINST PHYSICAL DMG. STORE IN COOL, DRY, WELL-VENT LOCATION AWAY FROM ANY AREA WHERE FIRE HAZARD MAY BE ACUTE. OUTSIDE STORAGE PREFERRED.

SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION

Ventilation System:
- PROVIDE LOCAL EXHAUST OR PROCESS ENCLOSURE VENTILATION TO MEET PUBLISHED EXPOSURE LIMITS.

Hand Protection Description:
- IMPERVIOUS GLOVES (FP N).

Eye/Face Protection:
- CHEM WORK GOG & FULL LENGTH FSHLD(FP N).

Respiratory Protection:
USE NIOSH/MSHA APPROVED RESPIRATOR APPROPRIATE FOR EXPOSURE OF CONCERN (FP N). FOR ADDITIONAL INFORMATION ON RESPIRATOR SELECTION, REFER TO ORIGINAL MSDS (FP N).

Other Protective:
IMPERVIOUS CLOTHING & EQUIPMENT. EYE WASH FOUNTAIN & QUICK DRENCH SHOWER W/IN IMMEDIATE WORK AREA FOR EMERGENCY USE.

Other:
PH: 1.3 @ 0.1 M SOLN. FIRE FIGHT PROC: EXPSD TO FLAMES UNTIL WELL AFTER FIRE OUT. STAY AWAY FROM ENDS OF TANKS. DO NOT USE WATER DIRECTLY ON MATL. IF LG AMTS OF COMBUST MATLS INVOLVED, USE WATER SPRAY/F OG IN FLOODING AMTS. AVOID BRTHG CORROSIVE DUSTS & FUMES FROM BURNING MATL, KEEP UPWIND.

Work Hygienic Practices
NONE SPECIFIED BY MANUFACTURER.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Physical State/Appearance:
COLORLESS TO WHITE, MONOCLONIC OR RHOMBIC HYGROSCOPIC CRYSTALS.
pH:
SUPDAT
Decomposition Temperature:
N/K
Vapor Pressure:
<0.001
Vapor Density:
N/K
Boiling Point:
N/K
Melting Point:
374F, 190C
Solubility In Water:
10%
Specific Gravity:
1.9 @ 17C
Evaporation Point:
N/K
Percent Volatile:
N/K
Viscosity:
N/P
Other:
Corrosion Rate: N/K

HCC
C2

SECTION 10 : STABILITY AND REACTIVITY

Chemical Stability:
YES
Conditions to Avoid:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

Incompatibilities with Other Materials:
ALKALIES, FURFURYL ALCOHOL, STRONG OXIDIZERS, SILVER & SILVER CMPDS, SODIUM CHLORITE, SODIUM HYPOCHLORITE.

Hazardous Polymerization:
NO

Hazardous Decomposition Products:
THERMAL DECOMPOSITION MAY RELEASE HIGHLY TOXIC CO & IRRITATING & TOXIC FUMES OF FORMIC ACID.

Conditions To Avoid Polymerization
NOT RELEVANT

SECTION 11 : TOXICOLOGICAL INFORMATION

Toxicological Paragraph:
N/P

SECTION 12 : ECOLOGICAL INFORMATION

Ecological Paragraph:
N/P

SECTION 13 : DISPOSAL CONSIDERATIONS

Waste Disposal:
OBSERVE ALL FEDERAL, STATE & LOCAL REGULATIONS WHEN DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT DISTRICT DIRECTOR OF ENVIRONMENTAL PROTECTION AGENCY.

SECTION 14 : TRANSPORT INFORMATION

Transportation Information:
N/P

SECTION 15 : REGULATORY INFORMATION

Applies to all ingredients:
SARA:
N/P
US Federal:
N/P
State:
N/P

SECTION 16 : ADDITIONAL INFORMATION

MSDS Author:
N/P
Disclaimer:
Please note that although the information, opinions and recommendations contained in these Material Safety Data Sheets are compiled from sources believed to be reliable, we accept no responsibility for the accuracy, sufficiency, or reliability or for any loss or injury resulting from the use of the information. Newly discovered hazards are frequent and this information may not be completely up to date.

Other Information
N/P

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