FOR LARGER FIRES, USE WATER SPRAY, FOAM OR REGULAR FOAM (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FIREFIGHTING:
MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK. APPLY COLDING WATER TO SIDES OF CONTAINERS THAT ARE EXPOSED TO FLAMES UNTIL WELL AFTER FIRE IS OUT. STAY AWAY FROM ENDS OF Tanks (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5, GUIDE PAGE 60).

EXTINGUISH USING AGENT INDICATED; DO NOT USE WATER DIRECTLY ON MATERIAL. IF LARGE AMOUNTS OF COMBUSTIBLE MATERIALS ARE INVOLVED, USE WATER SPRAY OR FOAM IN FLOODING AMOUNTS. AVOID BREATHING CORROSIVE DUSTS AND FUMES FROM BURNING MATERIAL, KEEP UPWIND.

FISHER SCIENTIFIC  
CHEMICAL DIVISION  
1 REAGENT LANE  
FAIR LAWN NJ 07410  
(201) 786-7100  

THIS INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.
LACTIC ACID:
500 MG/24 HOURS: SKIN-RABBIT SEVERE IRRITATION; 750 MG EYE-RABBIT SEVERE IRRITATION; 750 MG/24 HOURS: EYE-RABBIT SEVERE IRRITATION; 3730 MG/KG ORAL-RAT LD50; 4875 MG/KG ORAL-MOUSE LD50; 4500 MG/KG SUBCUTANEOUS-MOUSE LD50; 500 MG/KG ORAL-RABBIT LD50; 1200 MG/KG RECTAL-MOUSE LD50; 1810 MG/KG ORAL-FROG; 38 MG/KG SUBCUTANEOUS-FROG; MUTAGENIC DATA: RTES; CARCINOGENIC STATUS: NONE
LACTIC ACID IS A SEVERE EYE, SKIN AND MUCOUS MEMBRANE IRRITANT. THE FOOD AND DRUG ADMINISTRATION LIST THIS SUBSTANCE AS A DIRECT FOOD SUBSTANCE AFFIRMED AS GENERALLY RECOGNIZED AS SAFE.

HEALTH EFFECTS AND FIRST AID

INHALATION:
LACTIC ACID: CORROSIVE.
ACUTE EXPOSURE- MAY CAUSE SEVERE IRRITATION WITH COUGHING, CHOKING, AND VARIABLE SYMPTOMS OF HEADACHE, DIZZINESS, WEAKNESS, AND PULMONARY EDMA WITH TIGHTNESS IN THE CHEST, AIR HUNGER, DIZZINESS, Frothy Sputum and Cyanosis. OTHER SYMPTOMS INCLUDE MOIST RALES, LOW BLOOD PRESSURE, AND HIGH PULSE PRESSURE. HEMOPTYSIS AND SHORTNESS OF BREATH MAY CONTINUE FOR SEVERAL WEEKS AFTER A SINGLE EXPOSURE. CHRONIC EXPOSURE- MAY CAUSE GASTROINTESTINAL DISTURBANCES, EROSION OF THE TEETH, JAW NECROSIS, BRONCHIAL IRRITATION WITH CHRONIC COUGH AND FREQUENT ATTACKS OF BRONCHIAL PNEUMONIA.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND BLOOD PRESSURE AND ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. ADMINISTRATION OF OXYGEN SHOULD BE PERFORMED BY QUALIFIED PERSONNEL. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:
LACTIC ACID: CORROSIVE.
ACUTE EXPOSURE- MAY CAUSE SEVERE IRRITATION WITH REDNESS, PAIN AND BROWISH OR YELLOWISH STAINS. BURNS MAY PENETRATE THE FULL THICKNESS OF THE SKIN WITH SHARPLY DEFINED EDGES, AND MAY HEAL SLOWLY WITH SCAR FORMATION. CHRONIC EXPOSURE- REPEATED AND PROLONGED CONTACT MAY CAUSE DERMATITIS.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). IN CASE OF CHEMICAL BURNS, COVER AREA WITH STERILE, DRY DRESSING. BANDAGE SECURELY, BUT NOT TOO TIGHTLY. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:
LACTIC ACID: CORROSIVE.
ACUTE EXPOSURE- MAY CAUSE SEVERE IRRITATION WITH REDNESS, PAIN, TEARING, BLURRED VISION, PHOTOPHOBIA, CONJUNCTIVAL EDEMA AND CORNEAL DESTRUCTION. CONCENTRATED Lactic Acid-applied to a rabbit's eyes with irrigation, caused necrosis and loss of the superficial layers of the cornea, threatenting perforation. In the anterior chamber was hypopyon and adhesion of the iris to the cornea in the periphery. The corneal epithelium was confluent and cells were growing into the remaining cornea. The lens had anterior opacity and destruction of epithelial cells anteriorly. CHRONIC EXPOSURE- REPEATED AND PROLONGED CONTACT MAY CAUSE CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER. OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). CONTINUE IRRITATING WITH NORMAL SALINE UNTIL THE PH HAS RETURNED TO NORMAL (30-60 MINUTES). COVER WITH STERILE BANDAGES. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:
LACTIC ACID: CORROSIVE.
ACUTE EXPOSURE- LARGE AMOUNTS OR EVEN DILUTE SOLUTIONS OF LACTIC ACID MAY CAUSE SEVERE GASTROINTESTINAL IRRITATION WITH BURNING OF THE MOUTH.
VENTILATION:
Provide local exhaust or general dilution ventilation system.

RESPIRATOR:
The following respirators are recommended based on information found in the physical data, toxicity and health effects sections. They are ranked in order from minimum to maximum respiratory protection.
The specific respirator selected must be based on contamination levels found in the workplace. Must be based on the specific operation, must not exceed the working limits of the respirator and must be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA).

Any chemical cartridge respirator with an organic vapor cartridge(s) with an acid gas cartridge(s) and a full facepiece.

DATE: 04/25/91  ACCT: 888328-01  PAGE: 3
INDEX: N/A  CAT NO: A162500  PG NBR: N/A

100 fold to render it harmless to tissues. Maintain airway and treat shock (Dressbach, Handbook of Poisoning, 12th Ed.). Get medical attention immediately. If vomiting occurs, keep head below hips to help prevent aspiration.

NDTODE:
0 specified antidote. Treat symptomatically and supportively.

--------- REACTIVITY

---

---

--------- COMATIBILITY:
ACTIC ACID:
HITRIC ACID + HYDROFLUORIC ACID: CONTACT MAY CAUSE EXPLOSION.
METALS: LACTIC ACID MAY CAUSE CORROSION.
SUPERHEATED STEAM: CAUSES LACTIC ACID TO BECOME VOLATILE.
OXIDIZING AGENTS: PHARMACOLOGICAL INCOMPATIBILITY.
IODIDES: PHARMACOLOGICAL INCOMPATIBILITY.
NITRIC ACID: PHARMACOLOGICAL INCOMPATIBILITY.
ALUMINUM: PHARMACOLOGICAL INCOMPATIBILITY.

ECOMPOSITION:
ACTIC ACID:
HERMAL DECOMPOSITION RELEASES TOXIC OXIDES OF CARBON AND SMOKE AND Soot.

---

---

--------- CONDITIONS TO AVOID
AID BURN BUT DOES NOT IGNITE READILY. FLAMMABLE, POISONOUS GASES MAY ACCUMULATE IN TANKS AND HOPPER CARS. MAY IGNITE COMBUSTIBLES (WOOD, PAPER, IL, ETC.).

--------- SPILL AND LEAK PROCEDURES
OIL SPILL:
1. A HOLDING AREA SUCH AS A PIT, POND OR LAGOON TO CONTAIN SPILL AND DIKE SURFACE FLOW USING BARRIER OF SOIL, SANDBAGS, FOAMED POLYURETHANE OR FOAMED CONCRETE. ABSORB LIQUID MASS WITH FLY ASH OR CEMENT POWDER.
2. IR SPILL:
3. UPELY WATER SPRAY TO KNOCK DOWN AND REDUCE VAPORS. KNOCK-DOWN WATER IS ORROSO AND TOXIC AND SHOULD BE DILUED FOR CONTAINMENT AND LATER DISPOSAL.
WATER SPILL:
4. NEUTRALIZE WITH AGRICULTURAL LIME, SLACKED LIME, CRUSHED LIMESTONE, OR SODIUM CARBONATE.
F DISSOLVED, AT A CONCENTRATION OF 10 PPM OR GREATER, APPLY ACTIVATED CARBON 1T TEN TIMES THE AMOUNT THAT HAS BEEN SPILLED.
5. MECHANICAL DREDGES OR LIFTS TO EXTRACT IMMOBILIZED WASTES OF POLLUTION AND RECIPITATES.

OCCUPATIONAL SPILL:
1. NOT TOUCH SPILLED MATERIAL. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. FOR MALL SPILLS, TAKE UP WITH SAND OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR LATER DISPOSAL. FOR SMALL SPILLS, WITH A CLEAN SHOVEL PLACE MATERIAL INTO CLEAN, DRY CONTAINER AND COVER. MOVE CONTAINERS FROM SPILL AREA. FOR LARGER SPILLS, DINE FAR AHEAD OF SPILL FOR LATER DISPOSAL. KEEP NECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENT ENTRY.

WEEP UP MATERIAL AND PLACE IN CONTAINER FOR DISPOSAL. WASH AREA WITH LOADING QUANTITIES OF WATER.

--------- PROTECTIVE EQUIPMENT

---------
ANY GAS MASK WITH ORGANIC VAPOR CANISTER (CHIN-STYLE OR FRONT- OR BACK-MOUNTED CANISTER), WITH A FULL FACEPIECE, PROVIDING PROTECTION AGAINST ACID GASES.

ANY TYPE 'C' SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE OR WITH A FULL FACEPIECE, HELMET OR HOOD OPERATED IN CONTINUOUS-FLOW MODE.

ANY SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

ANY SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

ANY SUPPLIED-AIR RESPIRATOR WITH FULL FACEPIECE AND OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

CLOTHING:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT ANY POSSIBILITY OF SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES AND A FACESHIELD TO PREVENT CONTACT WITH THIS SUBSTANCE.

EMERGENCY WASH FACILITIES:
WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES AND/OR SKIN MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN AND QUICK DRENCH SHOWER WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC, INC
CREATION DATE: 12/05/84
REVISION DATE: 12/03/90

ADITIONAL INFORMATION:
THIS INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.