Product ID:LITHIUM HYDROXIDE ANHYDROUS MSDS Date:10/23/1998 FSC:6810 NIIN:01-216-7108 Status Code:A MSDS Number: CKJQM === Responsible Party === **Company Name: CHEMETALL FOOTE CORPORATION** Address:348 HOLIDAY INN DR **City:KINGS MOUNTAIN** State:NC ZIP:28086 Country:US Info Phone Num:704-739 -2501 Emergency Phone Num:704-739-2501 Resp. Party Other MSDS Num.: CFM014 Preparer's Name:NOT PROVIDED Chemtrec Ind/Phone:(800)424-9300 CAGE:07660 === Contractor Identification === Company Name: CHEMETALL FOOTE CORPORATION Address:348 HOLIDAY INN DR Box:City:KINGS MOUNTAIN State:NC ZIP:28086 Country:US Phone:704-739-2501 CAGE:07660

Ingred Name:LITHIUM HYDROXIDE CAS:1310-65-2 RTECS #:OJ6307070 > Wt:99. OSHA PEL:2 MG/M3 OSHA LD50 LC50 Mixture:HUMAN INGESTION OF 10 GRAMS MAY BE FATAL Routes of Entry: Inhalation:YES Skin:YES Ingestion:NO Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO Health Hazards Acute and Chronic:INHALATION: DUST MAY SEVERELY IRRITATE

EYES, NOSE & RESPIRATORY SYSTEM. INHALING LARGE QUANTITIES MAY DAMAGE RESPIRATORY SYSTEM. EYES/SKIN: IS CAUSTIC CAUSING SEVERE IRRITATION & COR

ROSIVE DAMAGE CORN EAL DAMAGE & BLINDNESS IF

PRODUCT CONTAMINATES EYES. DEEP BURNS THAT ARE SLOW TO HEAL MAY LEAVE SCAR TISSUE. SKIN ABSORPTION NOT A SIGNIFICANT ROUTE. INGESTION: NOT ANTICIPATED TO OCCUR IN NORMAL OCCU PATIONAL SITUATIONS, BUT CAUSES SEVERE PAIN, BURNING OF MOUTH & THROAT. SEVERE OVEREXPOSURE CAUSES COLLAPSE & DEATH. INJECTION: IRRITATION AT POINT OF INJECTION PLUS SYMPTOMS LIKE DESCRIBED FOR SKIN & EYES MAY DEVELOP.

Effects of Overexposure:FOR ANTI

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CIPATED OCCUPATIONAL EXPOSURE, MAIN

EFFECT IS REDNESS, SEVERE IRRITATION, SKIN/EYE DAMAGE. INHALTION: COUGHING, SNEEZING, SORE THROAT. SKIN/EYES: SEVERE IRRITATION & CORROSIVE DAMAGE WITH DEEP BURNS. INGESTION: SEVERE PAIN, BURNING OF MOUTH & THROAT, VOMITING & DIARRHEA WHICH CAN LEAD TO ASPIRATION & DAMAGE LUNGS.

Medical Cond Aggravated by Exposure:PRE-EXISTING RESPIRATORY, SKIN, CENTRAL NERVOUS SYSTEM & KIDNEY CONDITIONS CAN BE AGGREVATED BY EXPOSURE TO PRODUCT.

First Aid:SKIN: IMMEDIATELY FLUSH WITH RUNNING WATER FOR AT LEAST 15 MINUTES. DO NOT INTERRUPT FLUSHING. REMOVE CONTAMINATED CLOTHES. DON'T CONTAMINATE EYES. GET MEDICAL HELP. EYES: OPEN VICTIMS EYES UNDER GENT LY RUNNING WATER KEEPING THEM OPEN. HAVE VICTIM ROLLS EYES. FLUSH AT LEAST 15 MINUTES & GET MEDICAL HELP. INHALATION: REMOVE TO FRESH AIR. IF NEEDED, USE ARTIFICIAL RESPIRATION. INGESTION: CALL PH YSI CIAN OR POISON CONTROL CENTER. IF NO PHYSICIAN AVAILABLE, DO NOT INDUCE VOMITING. GIVE MILK, EGG WHITES OR LARGE QUANTITIES OF WATER. NEVER INDUCE VOMITING OR GIVE ANYTHING IF VICTIM IS UNCONSCIOUS.

Extinguishing Media:PRODUCT IS NOT FLAMMABLE. USE FIRE EXTINGUISHING MATERIAL APPROPRIATE FOR SURROUNDING FIRES SUCH AS WATER SPRAY, CARBON DIOXIDE, FOAM, HALON, ANY "ABC" CLASS.

Fire Fighting Procedures:IN

CIPIENT FIRE RESPONDERS SHOULD WEAR EYE

PROTECTION. STRUCTURAL FIREFIGHTERS MUST WEAR SELF CONTAINED BREATING APPARATUS & FULL PROTECTIVE EQUIPMENT.

Unusual Fire/Explosion Hazard:WHEN INVOLVED IN A FIRE, MATERIAL MAY DECOMPOSE & PRODUCE IRRITATING FUMES & TOXIC GASES (LITHIUM COMPOUNDS). NOT SENSITIVE TO MECHANICAL IMPACT OR STATIC DISCHARGE.

Spill Release Procedures: RESPOND WITH TRAINED PERSONNEL USING PRE

-PLANNED PROCEDURES. USE PROPER EQUIPMENT. CLEAR AREA & PROTECT PEOPLE. MINIMUM PPE SHOULD BE LEVEL C: RUBBER GLOVES & NITRILE GLOVES OVER LATEX GLOVES, CHEMICA L RESITANT SUIT & BOOTS, HARD HAT & AIR-PURIFYING RESPIRATORY WITH HIGH-EFFICIENCY PARTICULATE FILTER. SELF-CONTAINED BREATHING APPARATUS WHERE OXYGEN LEVEL IS BELOW 19.5% OR IS UNKNOWN. Neutralizing Agent:CITRIC ACID

Handling and Storage Precaution

s:STORE IN COOL, DRY AREA AWAY FROM

DIRECT SUNLIGHT, HEAT SOURCES OR WHERE FREEZING IS POSSIBLE. KEEP TIGHTLY CLOSED WHEN NOT IN USE. STORE AWAY FROM INCOMPATIBLES. INSPECT CONTAINER FOR LEAKS & DAMAGE. READ LABLES PROVIDED PRIOR TO USE.

Other Precautions: FOLLOW PRACTICES OUTLINED FOR ACCIDENTAL RELEASE. ASSURE THAT APPLICATION EQUIPMENT IS LOCKED & TAGGED OUT SAFELY AS APPLICABLE. DECONTAMINATE EQUIPMENT BEFORE MAINTENANCE BEGINS. COLLECT ALL RINSATES & DISPOSE OF ACCORDING TO APPLICABLE FEDERAL, STATE & LOCAL PROCEDURES.

======= Exposure Controls/Personal Protection ==========

Respiratory Protection: NOT GENERALLY NEEDED WHEN USING THIS PRODUCT. MAINTAIN AIRBORNE CONCENTRATIONS BELOW GUIDELINES FOR INGREDIENTS. IF RESPIRATORY PROTECTION IS NEEDED, USE ONLY THAT WHICH IS AUTHORIZED BY 29 CFR 1910.1 34 OR APPLICABLE STATE REGULATIONS. USE SUPPLIED AIR IF OXYGEN LEVELS ARE BELOW 19.5%. Ventilation: USE ADEQUATE VENTILATION. ME CHANICAL EXHAUST MAY BE NEEDED Protective Gloves: NEOPRENE GLOVES FOR ROUTINE INDUSTRIAL USE Eye Protection: SPLASH GOGGLES OR SAFETY GLASSES. FACE SHIELD MAY BE NEEDED FOR SPECIFIC TASKS. Other Protective Equipment: EMERGENCY EYE WASH, APRON OR TYVEK SUIT Work Hygienic Practices: AVOID GETTING PRODUCT ON OR IN YOU. WASH THOROUGHLY AFTER USING MATERIAL. AVOID CREATING DUSTS. DO NOT EAT OR DRINK WHILE USING PRODUCT. Supplemental Safety and Health ========= Physical/Chemical Pro perties ================= HCC:B1 Melt/Freeze Pt:=450.C, 842.F Vapor Density:NOT APPLIC Spec Gravity:1.5 pH:14 (1.0 N SOLN) Solubility in Water:22.3 GM/100 ML Appearance and Odor:WHITE, CRYSTALLINE SOLID. AQUEOUS SOLUTIONS TURN LITMUS PAPER BLUE. Stability Indicator/Materials to Avoid:YES STRONG ACIDS, LITHIUM HYDROXIDE IS CORROSIVE TO ALUMINUM, LEAD & ZINC. Stability Condition to Avoid:LITHIUM HYDROXIDE REACTS WITH WATE R TO GENERATE HEAT; PRODUCT CAN ALSO REACT WITH CARBON DIOXIDE IN ATMOSPHERE & ABSORBS WATER FROM AIR. Hazardous Decomposition Products:LITHIUM COMPOUNDS & CAUSTIC VAPORS Conditions to Avoid Polymerization: MIXING PRODUCT WITH INCOMPATIBLE CHEMICALS Toxicological Information: EYES: IN ANIMAL TESTS LITHIUM HYDROXIDE SOLUTIONS ARE SIMILAR TO SODIUM HYDROXIDE WHICH CAUSES SEVERE

CORROSIVE EYE DAMAGE. SHORT TERM I

NHALATION: RATS EXPOSED TO

AEROSOL OF LITHIUM HYDROXIDE (570-150 0 MG/M3 - 4 HRS): RATS DEVELOPED BREATHING DIFFICULTIES & BECAME LESS ENERGETIC. IN ADDITION, THEY SHOWED SYMPTOMS OF SEVERE IRRITATION (COUGHING, CHOKING, BLEEDING AROUND EYES, NOSE) & LOST WEIGHT. S OME DIED AT HIGH CONCENTRATIONS. HAD LESIONS IN AIRWAYS & LUNGS. PRODUCT NOT A SENSITIZER BUT CAUSES SEVERE IRRITANCY & CORROSIVE DAMAGE TO SKIN, EYES & EXPOSED TISSUE.

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Ecological:LITHIUM HYDROXIDE IS STABLE IN ENVIRONMENT. HARMFUL TO CONTAMINATED PLANTS/ANIMALS. MINIMIZE ENVIRONMENTAL RELEASES. HARMFUL/FATAL TO AQUATIC PLANTS & ANIMALS IN CONTAMINATED BODIES OF WATER. NO DATA ON ACUTE AQUATIC TOXICITY, DEGRADABILITY, LOG BIOCONCENTRATION FACTOR (BCF) OR LOG OCTANOL/WATER PARTITION COEFFICIENT.

Waste Disposal Methods:SWEEP UP OR VACUUM SP ILLED MATERIAL CAREFULLY.

AVOID CREATING DUST. IF NECESSARY NEUTRALIZE WITH CITRIC ACID OR OR AGENTS SUITABLE. TEST AREA WITH LITMUS PAPER. DECONTAMINATE AREA THOROUGHLY. PLACE AL L RESIDUE IN SUITABLE CONTAINER & SEAL. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE & FEDERAL REGULAT IONS.

Transport Information:DOT INFORMATION: SHIPPING NAME: LITHIUM HYDROXIDE, SOLID, CLASS: 8, UN 2680, PG II, LABEL: CORROSIVE

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ERG NO; 154, NOT A MARINE POLLUTANT. CONSIDERED A DANGEROUS GOOD BY TRANSPORT CANADA.

Federal Regulatory Information:LITHIUM HYDROXIDE IS LISTED ON TSCA INVENTORY.

State Regulatory Information:LITHIUM HYDROXIDE NOT COVERED UNDER KNOWN STATE REGULATIONS.

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