

CHEM ONE CORPORATION -- CITRIC ACID, ANHYDROUS -- 6810-00-141-2942

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Product Identification
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Product ID: CITRIC ACID, ANHYDROUS
MSDS Date: 04/28/1999
FSC: 6810
NIIN: 00-141-2942
Status Code: A
MSDS Number: CJSCV
==== Responsible Party ====
Company Name: CHEM ONE CORPORATION
Address: 8017 PINEMONT DRIVE, SUITE 100
Box: UNK
City: HOUSTON
State: TX
ZIP: 77040-6519
Country: US
Info Phone Num: 713-896-9966/FAX
: 713-8967540
Emergency Phone Num: 713-896-9966
Chemtrec Ind/Phone: (800)424-9300
CAGE: TO395
==== Contractor Identification ====
Company Name: CHEM ONE CORPORATION
Address: 8017 PINEMONT DRIVE, SUITE 100
Box: UNK
City: HOUSTON
State: TX
ZIP: 77040-6519
Country: US
Phone: 713-896-9966/FAX: 713-8967540
CAGE: TO395
Company Name: E-BESAN
Address: 117 FOCIS, SUITE 214
Box: 9237
City: METAIRIE
State: LA
ZIP: 70055
Country: US
Phone: 504-908-1222
Contract Num: SP0450-99-M-NE34
CAGE: 1EAB6

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Composition/Information
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on Ingredients =====

Ingred Name:CITRIC ACID

CAS:77-92-9

RTECS #:GE7350000

> Wt:99.

===== Hazards Identification =====

LD50 LC50 Mixture:ORAL LD50(RAT): 3 GM/KG

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES

Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO

Health Hazards Acute and Chronic:EYES-DUSTS & SOLUTION MAY CAUSE SEVERE IRRITATION TO EYES. CONCENTRATED SOLUTIONS MAY BE CORROSIVE TO EYES & CAUSE CORNEAL ULCERATION. SKI

N-THIS PRODUCTION MAY CAUSE MODERATE

IRRITATION OF SKIN. CITRI C ACID MAY CAUSE ALLERGIC CONTACT DERMATITIS WITH PROLONGED OR REPEATED CONTACT. INGESTION-CITRIC ACID MAY CAUSE GASTROINTESTINAL IRRITATION. CONCENTRATED SOLUTIONS MAY CAUSE NEUROTIC & ULCERATIVE LE SIONS ON ORAL MUCOUS MEMBRANES. CHRONIC INGESTION OF HIGH CONCENTRATION CITRIC ACID CAN RESULT IN ERROSION OF TOOTH ENAMEL. INHILATION-DUST/MIST FROM SOLUTION MAY CAUSE MILD TO MODERATE IRRITATION OF NOSE &

THROAT.

Explanation of Carcinogenicity:NONE OF THIS PRODUCT'S COMPONENTS ARE LISTED BY ACGIH, IARC, NIOSH OR NTP.

Effects of Overexposure:EYES: REDNESS,TEARING AND PAIN. SKIN: ALLERGIC CONTACT DERMATITIS. INGESTION: NAUSEA, DIARRHEA, VOMITING, ADOMINAL PAIN. CONCENTRATED SOLUTIONS MAY CAUSE ULCERATIVE LESIONS ON ORAL MUCOUS MEMBRANE. C HRONIC INGESTION OF HIGH CONCENTRATIONS CITRIC ACID CAN RESULT IN ERROSION OF TOOTH ENAMEL. INHILATION: COUGHING, SNEEZING AND LABORED BR EATHING.

===== First Aid Measures =====

First Aid:EYE:IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR 15 MINS. GET MEDICAL ATTENTION IF SYMPTOMS OF PAIN,SWELLING,OR TEARING EXIST AFTER FLUSHING. SKIN:IMMEDIATELY WASH THOROUGHLY WITH SOAP & WATER.GET MEDIC AL ATTENTION OF IRRITATION DEVELOPS OR PERSISTS. INGESTION:HAVE VICTIM RINSE MOUTH WITH WATER, IF CONSCIOUS. NEVER GIVE ANYTHING BY MOUTH TO A VICTIM WHO IS UNCONSCIOUS OR HAVING CONVUL

SIONS. CONTACT PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. INHALATION:MOVE VICTIM TO FRESH AIR, APPLY ARTIFICIAL RESPIRATION IF NOT BREATHING. IF COUGH OR DIFFICULTY BREATHING DEVELOPS, SEEK MEDICAL ATTENTION.

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===== Fire Fighting Measures =====

Flash Point:=100.C, 212.F

Autoignition Temp:=1010.C, 1850.F

Lower Limits:0.28-2.3KG/M

Extinguishing Media:WATER, FOAM, DRY CHEMICAL, CARBON DIOXIDE

Fire Fighting Procedures:FIREFIGHTERS SHOULD WEAR FULL PROTECTIVE

CLOTHING INCLUDING A SELF-CONTAINED BREATHING APPARATUS.

Unusual Fire/Explosion Hazard:SLIGHT FIRE POTENTIAL WHEN HEATED. CITRIC ACID POSES A SERIOUS DUST EXPLOSION HAZARD. COMBUSTIBLE IN LIQUID FORM.

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===== Accidental Release Measures =====

Spill Release Procedures:STOP FLOW OF MATERIAL, IF THIS IS WITHOUT RISK. CONTAIN THE DISCHARGED MATERIAL. IF SWEEPING OF A CONTAMINATED AREA IS NECESSARY USE A DUST SUPPRESSANT WHICH DOES NOT R

EACT WITH PRODUCT. WEAR APPROPIA TE PROTECTIVE EQUIPMENT & CLOTHING DURING CLEAN-UP. ADD LIME. SHOVEL MATERIAL INTO WASTE CONTAINER. WASH THE AREA AFTER A SPILL OR LEAK CLEAN-UP.

Neutralizing Agent:LIME

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===== Handling and Storage =====

Handling and Storage Precautions:ALL EMPLOYEES WHO HANDLE THIS MATERIAL SHOULD BE TRAINED TO HANDLE IT SAFELY.DO NOT BREATHE DUST.AVOID ALL CONTACT WITH SKIN AND EYES.USE THIS PRODUCT ONLY WITH ADEQUATE VEN

TILATION.WASH THOROUGHLY AF TER HANDLING.AVOID ACCUMULATION OF DUST WHICH CAN LEAD TO A SERIOUS HAZARD OF DUST EXPLOSION.

Other Precautions:KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE.STORE CONTAINERS IN COOL, DRY LOCATION, AWAY FROM DIRECT SUNLIGHT, SOURCES OF INTENSE HEAT, OR WHERE FREEZING IS POSSIBLE.MATERIAL SHOULD BE STORED IN SECONDA RY CONTAINERS OR IN A DIKED AREA.STORAGE AREA SHOULD BE MADE OF FIRE-RESISTANT MATERIALS.POST "NO SM OKING" SIGNS.

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===== Expo

sure Controls/Personal Protection =====

Respiratory Protection:NONE REQUIRED WHERE ADEQUATE CONDITIONS EXIST.
IF AIRBORNE CONCENTRATION IS HIGH, USE AN APPROPRIATE RESPIRATOR
DUST MASK.

Ventilation:MECHANICAL VENTILATION SUCH AS DILLUTION & LOCAL
EXHAUST.USE CORROSION-RESISTANT VENTILATION SYSTEM & EXHAUST TO
OUTSIDE;DUST COLLECTOR &EXPLOSION VENTS.

Protective Gloves:IMPERVIOUS(BUTYL OR NATURAL RUBBER,NEOPRENE,NITRILE
RUBBER,POLYETHYLENE,PVC)

Eye Protection:SAFETY G

LASSES WITH SIDE SHIELDS OR CHEMICAL GOGGLES FOR
SOLUTIONS=FACE SHIELDS

Other Protective Equipment:EYE WASH FOUNTAIN AND SAFETY SHOWER IN WORK
AREA.

Work Hygienic Practices:USE GOOD HYGIENE PRACTICES WHEN HANDLING THIS
MATERIAL INCLUDING CHANGING AND LAUNDERING CLOTHING AFTER USE.WASH
HANDS THOROUGHLY AFTER HANDLING MATERIAL.DO NOT EAT,DRINK,OR SMOKE
IN WORK AREAS.

Supplemental Safety and Health

FIRST AID: NOTE TO PHYSICIAN: THERE IS NO SPECIFIC ANTIDOTE. CARE IS
SYMPTOMAT

IC AND SUPPORTIVE. SPECIAL PROCEDURES: REMOVE SOILED
CLOTHING AND LAUNDER BEFORE RESUE. AVOID ALL SKIN CONTACT WITH THE
SPILLED MATERIAL. HAVE EMERGENCY EQUIPMENT READILY AVAILABLE.

===== Physical/Chemical Properties =====

HCC:C3

Boiling Pt:B.P. Text:DECOMPOSES

Melt/Freeze Pt:=153.C, 307.4F

Spec Gravity:1.665@20C

pH:1.8(5%SOLUTION)

Solubility in Water:162G/100ML H2O@25C

Appearance and Odor:SOLID,ODORLESS,COLORLESS POWDER

Percent Volatiles by Volume:0@21C

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===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

METAL NITRATES,STRONG BASES AND OXIDIZERS;REDUCING AGENTS.WHEN WET A
CORROSIVE TO BRASS, COPPER,ZINC,ALUMINUM AND THEIR ALLOYS,LEAD CAST
IRON AND STEEL(NOT STAINLESS STEEL)

Stability Condition to Avoid:HEAT,MOISTURE AND INCOMPATABLE MATERIALS

Hazardous Decomposition Products:CARBON DIOXIDE AND CARBON

MONOXIDE.INCOMPLETE COMBUSTION MAY PRODUCE IRRITATING FUMES AND
ACRID S

MOKE.

===== Toxicological Information =====

Toxicological Information: CITRIC ACID HAS BEEN REPORTED TO HAVE ALLERGIC PROPERTIES, AND MIGHT CAUSE ALLERGIC CONTACT DERMATITIS. IRRITATION OF THE SKIN, EYES, AND GASTROINTESTINAL TRACT MAY OCCUR BUT SHOULD NOT REQUIRE EXTENSIVE THERAPY BEYOND DILUTION/IRRIGATION. DUST AND SOLUTION MAY CAUSE SEVERE IRRITATION TO THE EYES, WITH SYMPTOMS THAT INCLUDE REDNESS, TEARING, AND PAIN. CONCENTRATED SOLUTIONS MAY BE CORROSIVE TO THE EYES AND CAUSE CORNEAL ULCERATIONS.

===== Ecological Information =====

Ecological: WATER SOLUBILITY=59.2%(20C); 84%(100C). BIOLOGICAL OXYGEN DEMAND (BOD): 40%, 5 DAYS; 60%, 10-20 DAYS. CITRIC ACID BIODEGRADES QUITE RAPIDLY. IT IS DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS. LOWER PH IN WATER BUT DOES NOT DISSOCIATE TO ANY GREAT EXTENT. FOOD CHAIN CONCENTRATION POTENTIAL: VERY LOW. ENVIRONMENTAL FATE: CITRIC ACID IS A NATURALLY OCCURRING CHEMICAL AND IS BIODEGRADABLE. OCTANOL/WATER PARTITION COEFFICIENT LOG P (OCT)=1.72.

===== Disposal Considerations =====

Waste Disposal Methods: REVIEW FEDERAL, PROVINCIAL, AND LOCAL GOVERNMENT REQUIREMENTS PRIOR TO DISPOSAL. DISPOSAL BY CONTROLLED INCINERATION OR SECURE LANDFILL MAY BE ACCEPTABLE. US EPA WASTE NUMBER & DESCRIPTIONS: CONCENTRATED SOLUTIONS MAY BE CONSIDERED D002 WASTE (CORROSIVE) BY RCRA. WASTE SHOULD BE TESTED PRIOR TO DISPOSAL TO DETERMINE CLASSIFICATION.

===== MSDS Transport Information =====

Transport Information: US DOT INFORMATION: NON-REGULATED. UNITED PARCEL SERVICE SHIPPING INFORMATION: NON-REGULATED. INTERNATIONAL TRANSPORTATION REGULATIONS: NOT APPLICABLE. I.M.O. CLASSIFICATION: CITRIC ACID IS NOT REGULATED BY THE I.M.O.

===== Regulatory Information =====

SARA Title III Information:

NONE OF THIS PRODUCTS COMPONENTS ARE LISTED UNDER SARA SECTION 302, SARA SECTION 313, OR CERCLA. SARA 302: THERE ARE NO SPECIFIC THRESHOLD PLANNING QUANTITIES FOR CITRIC ACID. THE DEFAULT FEDERAL MSDS SUBMISSION AND INVENTORY REQUIREMENTS FILING THRESHOLD OF 10,000 LBS THEREFORE APPLIES, PER 40 CFR 370.20.

Federal Regulatory Information:CITRIC ACID IS LISTED BY TSCA, DSL, AND EINECS.

State Regulatory Information:NONE OF THIS PRODUCTS COMPOENETS ARE LISTED ON THE STATE LISTS FROM CA, FL, MA, MN, NJ OR PA.

===== Other Information =====

Disclaimer (provided with this information by the compiling agencies): This information is formulated for use by elements of the Department of Defense. The United States of America in no manner whatsoever, expressly or implied, warrants this information to be accurate and disclaims all liability for its use. Any person utilizing this document should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation.