

MALLINCKRODT BAKER, INC. -- SULFURIC ACID, 52-100% -- 6810-01-432-0063

===== Product Identification =====

Product ID:SULFURIC ACID, 52-100%

MSDS Date:09/24/1997

FSC:6810

NIIN:01-432-0063

Status Code:A

MSDS Number: CJFYH

=== Responsible Party ===

Company Name:MALLINCKRODT BAKER, INC.

Address:222 RED SCHOOL LANE

City:PHILLIPSBURG

State:NJ

ZIP:08865

Country:US

Info Phone Num:800-582-2537

Emergency

Phone Num:(800)424-9300

Resp. Party Other MSDS Num.:S8234

Preparer's Name:STRATEGIC SVC DIV

Chemtec Ind/Phone:(800)424-9300

CAGE:70829

=== Contractor Identification ===

Company Name:MALLINCKRODT BAKER, INC.

Address:222 RED SCHOOL LANE

Box:City:PHILLIPSBURG

State:NJ

ZIP:08865

Country:US

Phone:800-582-2537

CAGE:70829

Company Name:PHOENIX INDUSTRIES INC

Address:1519 CHAMBERLAYNE PARKWAY

Box:City:RICHMOND

State:VA

ZIP:23222

Country:US

Phone:804-264-5183/FAX: 264-5535

Contract Num:SP045099MC721

CA

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Composition/Information on Ingredients
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Ingred Name:SULFURIC ACID

CAS:7664-93-9

RTECS #:WS5600000

Minumum % Wt:52.

Maxumum % Wt:100.

OSHA PEL:1 MG/M3

ACGIH TLV:1 MG/M3

ACGIH STEL:3 MG/M3

EPA Rpt Qty:1000 LBS

DOT Rpt Qty:1000 LBS

Ingred Name:WATER

CAS:7732-18-5

RTECS #:ZC0110000

Minumum % Wt:0.

Maxumum % Wt:48.

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Hazards Identification
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LD50 LC50 Mixture:LD50 ORAL RAT: 2140 MG/KG

Routes of Entry: Inhalation:YES

Skin:YES Ingestion:YES

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

Health Hazards Acute and Chronic:INHALATION PRODUCES DAMAGING EFFECTS ON THE MUCOUS MEMBRANES & UPPER RESPIRATORY TRACT. SWALLOWING CAN CAUSE SEVERE BURNS TO THE MOUTH, THROAT & STOMACH, LEADING TO DEATH. SKIN CONTACT MAY CAUSE REDNE SS, PAIN & SEVERE BURNS. EYE CONTACT CAN CAUSE BLURRED VISION, REDNESS, APIN & SEVERE BURNS, BLINDNESS. CHRONIC EXPOSURE TO MIST OR VAPORS MAY CAUSE DAMAGE TO TEETH

. CHRONIC EXPOSURE TO MISTS CONTAINI NG SUFURIC ACID IS A CANCER HAZARD.

Explanation of Carcinogenicity:THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS CLASSIFIED "STRONG INORGANIC ACID MISTS CONTAINING SULFURIC ACID" AS A KNOWN HUMAN CARCINOGEN, (IARC CATAGORY 1). THIS CLASSIFICATION APPLIES TO MISTS CONTAINING SULFURIC ACID AND NOT TO SULFURIC ACID OR SULFURIC ACID SOLUTIONS.

Effects of Overexposure:INHALED-IRRITATION OF THE NOSE & THROAT, LABORED BREATHING,

LUNG EDEMA. INGESTION-BURNS TO MOUTH, THROAT &STOMACH, SORETHROAT, VOMITING, DIARRHEA, CIRCULATORY COLLAPSE WITH CLAMMY SKIN, WAEK RAPID PUL SE, SHALLOW RESPIRATIONS, SCANTY URINE. SKIN-REDNESS, PAIN, SEVERE BURNS, CIRCULATORY COLLAPSE WITH CLAMMY SKIN, WEAK/RAPID PULSE, SHALLOW RESPIRATIONS, SCANTY URINE. EYES-BLURRED VISION, REDNESS, PA IN, SEVERE TISSUE BURNS.
Medical Cond Aggravated by Exposure:PERSONS WITH PRE-EXISTING SKIN DISORDERS OR EYE PROBLEMS OR IMPAIRED RES PIRATORY FUNCTION MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THE SUBSTANCE.

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

First Aid:INHALED-REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. GIVE OXYGEN IF BREATHING DIFFICULT. CALL PHYSICIAN IMMEDIATELY. INGESTED-DO NOT INDUCE VOMITING! GIVE ALRGE QUANTITIES OF WAT ER. NEVER ANYTHING BY MOUTH IF UNCONSCIOUS. CALL A PHYSICIAN IMMEDIATELY. SKIN-IMMEDIATELY FLUSH WITH WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHES. EXCESS ACID ON SKIN CAN BE NEUT RALIZED WITH A 2% SOLUTION OF SODIUM BICARBONATE. CALL A PHYSICIAN IMMEDIATELY. EYES-IMMEDIATELY FLUSH WITH WATER, LIFING LIDS. CALL PHYSICIAN IMMEDIATELY.

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

Extinguishing Media:DRY CHEMICAL, FOAM OR CARBON DIOXIDE. DO NOT USE WATER ON MATERIAL. HOWEVER, WATER SPRAY MAY BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL.
Fire Fighti ng Procedures:IN THE EVENT OF FIRE, WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE. STRUCTURA L FIREFIGHTER'S PROTECTIVE CLOTHING IS INEFFECTIVE FOR FIRES INVOLVING THIS MATERIAL. STAY AWAY FROM SEALED CONTAINERS.
Unusual Fire/Explosion Hazard:CONCENTRATED MATERIAL IS A STRONG DEHYDRATING AGENT. REACTS WITH ORGANIC MATERIAL AND MAY CAUSE IGNITION OF FINELY DIVIDED MATERIALS ON CONTACT.

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

Spill Release Procedures:VENTILATE AREA. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT. ISOLATE HAZARD AREA. KEEP UNECESSARY & UNPROTECTED PERSONNEL AWAY. CONTAIN & RECOVER WHEN POSSIBLE. NEUTRALIZE WITH ALKALINE MATERIAL (S ODA ASH, LIME) THEN ABSORB WITH INERT MATERIAL (VERMICULITE, DRY SAND) & PLACE IN A CHEMICAL WASTE CONTAINER. DO NOT USE COMBUSTIBLE MATERIALS SUC

H AS SAWDUST.

Neutralizing Agent:ALKALINE MATERIAL SUCH AS SODA ASH, LIME.

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

Handling and Storage Precautions:STORE IN A DRY, VENTILATED STORAGE AREA WITH ACID RESISTANT FLOORS & GOOD DRAINAGE. PROTECT FROM PHYSICAL DAMAGE. KEEP OUT OF DIRECT SUNLIGHT & AWAY FROM HEAT, WATER & INCOMPATIBLE MATERIALS. DO NOT WASH OUT CONTAINER & USE FOR OTHER PURPOSES.

Other Precautions:WHEN DILUTING, ADD SULFURIC ACID TO WATER.

WHEN

OPENING METAL CONTAINERS, USE NON-SPARKING TOOLS BECAUSE OF POSSIBILITY OF HYDROGEN GAS BEING PRESENT. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESIDUES (GAS, LIQUID). OBSERVE ALL WARNING & PRECAUTIONS LISTED ON THE PRODUCT.

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

Respiratory Protection:IF EXPOSURE LIMIT IS EXCEEDED, A FULL FACEPIECE RESPIRATOR WITH ACID GAS CARTRIDGE & DUST/MIST FILTER MAY BE WORN

UP TO 50 TIMES THE EXPOSURE LIMIT OR THE MAXIMUM USE CONCENTRATION SPECIFIED BY THE APPROPRIATE REGULATORY AGENCY/RESPIRATOR SUPPLIER. FOR EMERGENCIES OR WHERE THE LEVELS ARE NOT KNOWN, USE A FULL-FACE, POSITIVE-PRESSURE, AIR-SUPPLIED RESPIRATOR.

Ventilation:A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEES EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS.

Protective Gloves:WEAR IMPERVIOUS GLOVES.

Eye Protection:CHEMICAL SAFETY GOGGLES AND/OR A FULL FACE SHIELD.

Other Protective Equipment:WEAR IMPERVIOUS PROTECTIVE CLOTHING INCLUDING BOOTS, LAB COAT, APRON OR COVERALLS, AS APPROPRIATE, TO PREVENT SKIN CONTACT. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

Work Hygienic Practices:WASH THOROUGHLY AFTER HANDLING. DO NOT BREATHE. DO NOT GET IN EYES, ON SKIN OR CLOTHES.

Supplemental Safety and Health

PRODUCT USE: LABORATORY REAGENT.

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

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CC:C1
Boiling Pt:=290.C, 554.F
Decomp Temp:=340.C, 644.F
Vapor Pres:1 @145.8C
Vapor Density:3.4
Solubility in Water:MISCIBLE
Appearance and Odor:CLEAR OILY LIQUID, ODORLESS

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

Stability Indicator/Materials to Avoid:YES
WATER, POTASSIUM CHLORATE, POTASSIUM PERCHLORATE, POTASSIUM
PERMANGANATE, SODIUM, LITHIUM, BASES, ORGANIC MATERIAL, HALOGENS,
METAL ACETYLIDES, OXIDES AND HYDRIDES, METALS, STRONG OXIDIZING &
REDUCING AG
ENTS & MANY OTHER RE
Stability Condition to Avoid:STABLE UNDER ORDINARY CONDITIONS OF USE
AND STORAGE. CONCENTRATED SOLUTIONS REACT VIOLENTLY WITH WATER,
SPATTERING AND LIBERATING HEAT.
Hazardous Decomposition Products:THERMAL DECOMPOSITION:OXIDES OF
SULFUR.WATER CONTACT:TOXIC & CORROSIVE FUMES.CARBONATE
REACTION:CARBON DIOXIDE. CYANIDES & SULFIES REACTIONS POISONOUS
HYDROGEN CYANIDE & HYDROGEN SULFIDE, RESPECTIVELY.
Conditions to Avoid Polymerization:HEAT, MOISTURE, INCOMPAT
IBLES.

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

Toxicological Information:ORAL RAT LD50: 2140 MG/KG; INHALATION RAT
LC50: 510 MG/M3/2HR; STANDARD DRAIZE, EYE RABBIT, 250 UG (SEVERE);
INVESTIGATED AS A TUMORIGEN, REPRODUCTIVE EFFECTOR. CANCER STATUS:
THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS
CLASSIFIED "STRONG INORGANIC ACID MISTS CONTAINING SULFURIC ACID AS
A KNOWN HUMAN CARCINOGEN, (IARC CATEGORY 1). THIS CLASSIFICATION
APPLI
ES ONLY TO MISTS CONTAINING SULFURIC ACID & NOT TO SULFURIC
ACID OR SULFURIC ACID SOLUTIONS. SULFURIC ACID: NTP KNOWN: NO; NTP
ANTICIPATED: NO; IARC CATAGORY: NONE. WATER: NTP KNOWN: NO; NTP
ANTICIPATED: NO;IARC CATAGORY: NONE.

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

Ecological:ENVIRONEMNTAL FATE: WHEN RELEASED INTO THE SOIL, MAY LEACH
INTO GROUNDWATER. WHEN RELEASED INTO THE AIR, MAY BE REMOVED FROM
ATMOSPHERE TO A MODERATE EXTENT BY WET DEPOS

ITION AND/OR DRY

DEPOSITION. ENVIRONMENTAL TOXICITY: LC50 FLOUNDER 100-330 MG/L/48 HR/CONDITIONS NOT SPECIFIED; LC50 SHRIMP 80-90 MG/L/48 HR/CONDITIONS NOT SPECIFIED; LC50 PRAWN 42.5 PPM/48 HR SALT WATER/CONDITIONS NOT SPECIFIED. THIS MATERIAL MAY BE TOXIC TO AQUATIC LIFE.

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

Waste Disposal Methods:WHATEVER CANNOT BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE HANDLED AS A HAZARDOUS WASTE & SENT TO A RCRA APPROVED INCINERATOR OR DISPOSED IN A RCRA APPROVED WASTE FACILITY. PROCESSING, USE OR CONTAMINATION MAY CHANGE THE WASTE MANAGEMENT OPTIONS. DISPOSE OF CONTAINER & UNUSED CONTENTS IAW FEDERAL, STATE & LOCAL REGULATIONS.

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

Transport Information:TRANSPORT BY LAND: SHIPPING NAME: SULFURIC ACID (MORE THAN 51% ACID)HAZARD CLASS: 8; UN/NA: UN1830; PACKING GROUP II; INFORMATION REPORTED FOR PRODUCT/SIZE 440

LB. INTERNATIONAL

(WATER, IMO): PROPER SHIPPING NAME: SULPHURIC ACID (WITH MORE THAN 51% ACID), HAZARD CLASS 8; UN/NA: UN1830; PACKING GROUP: II. INFORMATION REPORTED FOR PRODUCT/SIZE: 440 LB.

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

SARA Title III Information:SULFURIC ACID: SARA 302-RQ=1000LB, TPQ=1000LB; SARA 313 LIST: YES; CHEMICAL CATG: NO. SARA 311/312: ACUTE-YES; CHRONIC-YES; FIRE-NO; PRESSURE-NO; REACTIVITY-YES (PURE/LIQUID).

Federal

Regulatory Information:SULFURIC ACID: TSCA-YES; CERCLA-1000 LB; RCRA 261.33-NO; TSCA 8(D)-NO. TSCA 12(B)-NO.

State Regulatory Information:NONE SPECIFIED BY MANUFACTURER.

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

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