MALLINCKRODT BAKER INC. SUB OF MALLINCKRODT CHEMICAL -- BORIC ACID -- 6810-00-824-9090
========== Product Identification ==========

Product ID:BORIC ACID
MSDS Date:11/17/1999
FSC:6810
NIIN:00-824-9090
Status Code:A
MSDS Number: CKDPL
=== Responsible Party ===
Company Name:MALLINCKRODT BAKER INC. SUB OF MALLINCKRODT CHEMICAL
Address:222 RED SCHOOL LANE
City:PHILLIPSBURG
State:NJ
ZIP:08865
Country:US
Info Phone Num:800-582-2537
Emergency Phone Num:908-859-2151
Resp. P
arty Other MSDS Num.:MSDS NO: B3696
Preparer's Name:STRATEGIC SERVICES DIV
Chemtrec 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:SP0450-00-M-D662
CAGE:0YED2

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======== Composition/Information on Ingredients ==========

Ingred Name:BORIC ACID
CAS:10043-35-3
RTECS #:ED4550000
= Wt:100.

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

LD50 LC50 Mixture:LD50 = 2660 MG/KG (RAT)
Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:INHALE: CAUSES IRRITATION TO THE MUSOUS MEMBRANES OF THE RESPIRATORY TRACT. MAY BE ABSORBED FROM THE MUCO
US MEMBRANES. SKIN: CAUSES SKIN IRRITATION. NOT SIGNIFICANTLY ABSORBED THROUGH THE INTACT SKIN. READILY ABSORBED THROUGH DAMAGED OR BURNED SKIN. EYE: CAUSES IRRITATION, REDNESS & PAIN. CHRONIC: PROLONGED ABSORPTION CAUSES WEIGHT LOSS, VOMITING, DIARRHEA, SKIN RASH, CONVULSIONS & AMEMIA. LIVER & PARTICULARLY THE KIDNEYS MAY BE SUSCEPTIBLE.
Explanation of Carcinogenicity:NONE LISTED.
Effects of Overexposure:INHALATION: MAY BE ABSORBED FROM THE MUSOUS MEMBRANES, & DEPENDIN
G ON THE AMOUNT OF EXPOSURE COULD RESULT IN THE DEVELOPMENT OF NAUSEA, VOMITING, DIARRHEA, DROWSINESS, RASH, HEADACHE, FALL IN BODY TEM P. , LOW BLOOD PRESSURE, RENAL INJURY, CYANOSIS, COMA & DEATH. INGESTION: SYSMPTOMS PARALLEL ABSORPTION VIA INHALATION. ALULT FATAL DOSE REPORTED AT 5 TO > 30 GRAMS. SKIN: SYMPTOMS OF SKIN ABSORPTION PARALLEL INHALATION & INGESTION.
Medical Cond Aggravated by Exposure:PERSONS WITH PRE-EXISTING SKIN DISORDERS OR EYE PROBLEMS, OR IMPAIRED
LIVER, KIDNEY OR RESPIRATORY FUNCTION MAY BE MORE SUSECPTIBLE TO THE EFFECTS OF THE SUBSTANCE.

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

First Aid:INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN. INGESTION: INDUCE VOMITING IMMEDIATELY AS DIRECTED BY MEDICAL PERSONNEL. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SKIN: REMOVE ANY CONTAMINATED CLOTHIN

G. WASH
SKIN WITH SOAP OR MILD DETERGENT & WATER FOR AT LEAST 15 MINS. GET MEDICAL ATTENTION IF I RRITATION DEVELOPS OR PERSISTS. WASH CLOTHING BEFORE REUSE. EYE: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINS, LIFTING UPPER/LOWER EYELIDS OCCASIONALLY. GET MEDICAL ATTENTION IMMED IATELY.

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

Flash Point:NOT A FIRE HAZAR
Autoignition Temp:Autoignition Temp Text:NONE P
Lower Limits:NONE PROVIDE

Upper Limits:NONE PROVIDE
Extinguishing Media:USE ANY MEANS SUITABLE FOR EXTINGUISHING SURROUNDING FIRE.
Fire Fighting Procedures:IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING & NIOSH-APPROVED SELF CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESURE DEMAND OR OTHER POSITIVE PRESSURE MODE.
Unusual Fire/Explosion Hazard:A MIXTURE OF POTASSIUM AND BORIC ACID MAY EXPLODE ON IMPACT.

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

Spill Release Procedures:VENTILATE AREA OF LEAK OR SPILL. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT. SPILLS: PICK UP & PLACE IN A SUITABLE CONTAINER FOR RECLAMATION OR DISPOSAL, USING A METHOD THAT DOES NOT GENERATE DUST .
Neutralizing Agent:NONE PROVIDED BY MFR.

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

Handling and Storage Precautions:STORE IN CLOSED CONTAINERS IN A COOL, DRY AREA. CARBON STEEL OR ALUMINUM CONTAINERS ARE SUITABLE FOR STORA
GE. STAINLESS STEEL IS NEEDED FOR MOIST CONDITIONS. AVOID CONTACT ESPECIALLY WHEN SKIN IS CUT OR ABRAIDED. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESID
Other Precautions:NONE PROVIDED BY MFR.

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

Respiratory Protection:IF THE EXPOSURE LIMIT IS EXCEEDED, A HALF-FACE DUST/MIST RESPIRATOR MAY BE WORN FOR UP TO TEN TIMES THE EXPOSURE LIMIT OR THE MAXIMUM USE CONCENTRATION

SPECIFIED BY THE APPROPRIATE
REGULATORY AGENCY O R RESPIRATOR SUPPLIER, WHICHEVER IS LOWEST. A FULL-FACE PIECE DUST/MIST RESPIRATOR MAY BE WORN UP TO 50 TIMES THE EXPOSURE LIMIT. FOR EMERGENCIES OR INSTANCES W
Ventilation:A SYSTEM OF LOCAL &/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS.
Protective Gloves:GLOVES RECOMMENDED.
Eye Protection:CHEMICAL SAFETY GOGGLES.
Other Protective Equipment:EYEWASH FOUNTAIN AND QUICK-DRENCH FACIL
ITIES
IN WORK AREA. LAB COAT, APRON OR COVERALLS.
Work Hygienic Practices:USE GOOD HOUSEKEEPING PRACTICES TO PREVENT ACCUMULATION OF DUST & FOLLOW SOUND CLEANING TECHNIQUES THAT WILL KEEP AIRBORNE PARTICULATES AT A LOW LEVEL. WASH HANDS AFTER HANDLING THIS MATERIAL.
Supplemental Safety and Health
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========== Physical/Chemical Properties ==========

HCC:C3
Boiling Pt:B.P. Text:DECOMPOSES
Melt/Freeze Pt:=169.C, 336.2F
Decomp Temp:Decomp Text:NONE PROVIDED BY MF
R.
Vapor Pres:2.6 M MHG @ 20 DEG C
Vapor Density:NO INFO
pH:5.1 AQUEOUS SOL
Viscosity:NONE PROVIDED BY MFR.
Evaporation Rate & Reference:NO INFO FOUND
Solubility in Water:1G/18ML IN COLD WATER
Appearance and Odor:WHITE POWDER OR GRANULES, ODORLESS.
Percent Volatiles by Volume:0 @ 21 DEG C
Corrosion Rate:NONE PROVIDED BY MFR

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

Stability Indicator/Materials to Avoid:YES
POTASSIUM, ACETIC ANHYDRIDE, ALKALIS, CARBONATES, AND HYD
ROXIDES.
Stability Condition to Avoid:STABLE UNDER ORDINARY CONDITIONS OF USE & STORAGE. IF MOISTURE IS PRESENT, BORIC ACID CAN BE CORROSIVE TO IRON.
Hazardous Decomposition Products:LOSES CHEMICALLY COMBINED WATER UPON HEATING, FORMING METABORIC ACID (HBO2) AT 212 TO 221 DEG F, THEN PYROBORIC ACID (H2B4O7) AT 285 TO 320DEG F, & BORIC ANHYDRIDE AT HIGHER TEMPERATURES.
Conditions to Avoid Polymerization:WILL NOT OCCUR

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

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Toxicological Information:INVESTIGATED AS A MUTAGEN, TUMORIGEN, REPRODUCTIVE EFFECTOR.

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

Ecological:THE EC50/48-HOUR VALUES FOR DAPHNIA ARE OVER 100 MG/L. THIS MATERIAL MAY BE TOXIC TO AQUATIC LIFE.

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

Waste Disposal Methods:WHATEVER CANNOT BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE MANAGED IN AN APPROPRIATE & APPROVED WASTE DISPOSAL
FACILITY. PROCESSING, USE OR CONTAMINATION OF THIS PRODUCT MAY CHANGE THE WASTE MANAGEM ENT OPTIONS. STATE & LOCAL DISPOSAL REGULATIONS MAY DIFFER FROM FEDERAL REGULATIONS. DISPOSE OF CONT AINER & UNUSED

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

Transport Information:NOT REGULATED.

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

Federal Regulatory Information:ON TSCA INVENTORY LIST.