

MALLINCKRODT BAKER INC. -- NITRIC ACID FUMING -- 6810-00-241-1193

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

Product ID:NITRIC ACID FUMING

MSDS Date:12/08/1996

FSC:6810

NIIN:00-241-1193

Status Code:A

MSDS Number: CJZZX

=== 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:1

-908-859-2151

Resp. Party Other MSDS Num.:N3662

Preparer's Name:STRATEGIC SERVICES 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:SP0450-00-M-D320

CAGE

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

Ingred Name:NITRIC ACID
CAS:7697-37-2
RTECS #:QU5775000
Minumum % Wt:90.
Maxumum % Wt:100.
OSHA PEL:5 MG/M3;2 PPM
ACGIH TLV:5.2 MG/M3;2 PPM
ACGIH STEL:10 MG/M3;4 PPM
EPA Rpt Qty:1000 LBS
DOT Rpt Qty:1000 LBS

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

LD50 LC50 Mixture:INHALATION, RAT LC50: 67 PPM
Routes of Entry: Inhalation:YES Skin:UNKNOWN Ingestion:YES
Reports of Carcinogenicity:NTP:NO
IARC:NO OSHA:NO
Health Hazards Acute and Chronic:INHALATION: CORROSIVE! INHALATION OF VAPORS CAN CAUSE BREATHING DIFFICULTIES & LEAD TO PNEUMONIA & PULMONARY EDEMA, WHICH MAY BE FATAL. INGESTION: CORROSIVE! SWALLOWING NITRIC ACID CAN CAUSE IMMEDIATE PAIN & BURNS OF THE MOUTH, THROAT, ESOPHAGUS & GASTROINTESTINAL TRACT. SKIN: CORROSIVE! CAN CAUSE REDNESS, PAIN, AND SEVERE SKIN BURNS. CONCENTRATED SOLUTIONS CAUSE DEEP ULCERS AND STAIN. EYES: CORRO SIVE! VAPORS ARE IRRITATING & MAY CAUSE SEVERE DAMAGE TO EYES. SPLASHES MAY CAUSE SEVERE BURNS & PERMANENT EYE DAMAGE. CHRONIC: LONG-TERM EXPOSURE TO CONCENTRATED VAPORS MAY CAUSE EROSION OF TEETH & LUNG DAMAGE.
Explanation of Carcinogenicity:NONE SPECIFIED BY RESPONSIBLE PARTY.
Effects of Overexposure:INHALATION: COUGHING, CHOKING, AND IRRITATION OF THE NOSE, THROAT, AND RESPIRATORY TRACT. SYMPTOMS MAY DISAPPEAR ONLY TO RETURN IN A FEW HOURS & MORE SEVERELY. ONSET OF SYMPTOMS MAY BE DELAYED FOR 4-30 HOURS. SKIN: REDNESS, PAIN, SEVERE BURNS. EYES: SEVERE BURNS, PERMANENT EYE DAMAGE. INGESTION: PAIN, BURNS TO MOUTH, THROAT, ESOPHAGUS & GI TRACT.
Medical Cond Aggravated by Exposure:PERSONS WITH PRE-EXISTING SKIN DISORDERS, EYE DISEASE, OR CARDIOPULMONARY DISEASE MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE.

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

First Aid:INHALATION:REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL R

ESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

INGESTION: DO NOT INDUCE VOMITING! GIVE LARGE QUANTITIES OF WATER OR MILK IF AVAILABLE. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SKIN CONTACT: IN CASE OF CONTACT, IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING & SHOES. WASH CLOTHING BEFORE REUSE.

THOROUGHLY CLEAN SHOES BEFORE REUSE. EYE CONTACT: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT L

EAST 15 MINUTES, LIFTING LIDS.

GET MEDICAL ATTENTION.

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

Extinguishing Media:WATER SPRAY MAY BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL. DO NOT GET WATER INSIDE CONTAINER.

Fire Fighting Procedures:IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING & NIOSH-APPROVED SELF-CONTAINED BREATHING APPRATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE.

Unusual Fire/Explosion

Hazard:REACTS EXPLOSIVELY WITH COMBUSTIBLE

ORGANIC OR READILY OXIDIZABLE MATERIALS SUCH AS: ALCOHOLS, TURPENTINE, CHARCOAL, ORGANIC REFUSE, METAL POWDER, HYDROGEN SULFIDE, ETC. REACTS WITH MOST METALS TO REL EASE HYDROGEN GAS WHICH CAN FORM EXPLOSIVE MIXTURES WITH AIR.

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

Spill Release Procedures:VENTILATE AREA OF LEAK OR SPILL. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT. KEEP UNNECESSARY & UNPROTECTED

PERSONNEL FROM ENTERING. CONTAIN & RECOVER LIQUID WHEN POSSIBLE. NEUTRALIZE WITH ALKALIN E MATERIAL THEN ABSORB WITH AN INERT MATERIAL & PLACE IN A CHEMICAL WASTE CONTAINER. DO NOT USE COMBUSTIBLE MATERIALS,SUCH AS SAW DUST. DO NO NOT FLUSH TO SEWER.

Neutralizing Agent:SODA ASH, LIME.

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

Handling and Storage Precautions:STORE IN A COOL, DRY, VENTILATED STORAGE AREA WITH ACID RESISTANT FLOORS & GOOD DRAINAGE. PROT

ECT

FROM PHYSICAL DAMAGE. KEEP OUT OF DIRECT SUNLIGHT & AWAY FROM HEAT, WATER & INCOMPATIBLE MATERIALS. DO NOT WASH OUT CONTAINER & USE IT FOR OTHER PURPOSES.

Other Precautions:WHEN DILUTING, THE ACID SHOULD ALWAYS BE ADDED SLOWLY TO WATER & IN SMALL AMOUNTS. NEVER USE HOT WATER & NEVER ADD WATER TO THE ACID. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESIDUES. OBSERVE ALL WARNINGS & PRECAUTIONS.

=====
Exposure Control
s/Personal Protection =====

Respiratory Protection:NIOSH APPROVED:WEAR A SUPPLIED AIR, FULL-FACEPIECE RESPIRATOR, AIRLINED HOOD, OR FULL-FACEPIECE SELF-CONTAINED BREATHING APPARATUS. NITRIC ACID IS AN OXIDIZER AND SHOULD NOT COME IN CONTACT WITH CARTRIDGES AND CANISTERS THAT CONTAIN OXIDIZABLE MATERIALS, SUCH AS ACTIVATED CHARCOAL. CANISTER-TYPE RESPIRATORS USING SORBENTS ARE INEFFECTIVE.

Ventilation:LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE

EXPOSURE BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED.

Protective Gloves:WEAR IMPERVIOUS GLOVES.

Eye Protection:CHEMICAL SAFETY GOGGLES AND/OR FULL FACE SHIELD WHERE SPLASHING IS POSSIBLE.

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:NONE SPECIFIED BY RESPONSIBLE PARTY.

Supplemental Safety and Health
NONE SPECIFIED BY RESPONSIBLE PARTY.

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

HCC:C4

Boiling Pt:85.C, 185.F

Melt/Freeze Pt:-50.C, -58.F

Vapor Pres:48@20C (68F)

Vapor Density:2-3

pH:NO FORMATION

Evaporation Rate & Reference:NO INFORMATION FOUND.

Solubility in Water:INFINITELY SOLUBLE.

Appearance and Odor:YELLOW TO BROWNISH-RED FUMING LIQUID, SUFFOCATING, ACID ODOR.

Percent Volatiles by Volume:100

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

Stability Indicator/Materials to Avoid: YES

A DANGEROUSLY POWERFUL OXIDIZING AGENT, FUMING NITRIC ACID IS INCOMPATIBLE WITH MOST SUBSTANCES, ESPECIALLY STRONG BASES, METALLIC POWDERS, CARBIDES, HYDROGEN SULFIDE, TURPENTINE, AND COMBUSTIBLE ORGANICS.

Stability Condition to Avoid: HEAT, LIGHT, MOISTURE. STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE. CONTAINERS MAY BURST WHEN HEATED.

Hazardous Decomposition

Products: WHEN HEATED TO DECOMPOSITION, EMITS TOXIC NITROGEN OXIDES FUMES AND HYDROGEN NITRATE. WILL REACT WITH WATER OR STEAM TO PRODUCE HEAT AND TOXIC AND CORROSIVE FUMES.

Conditions to Avoid Polymerization: WILL NOT OCCUR.

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

Toxicological Information: FOR NITRIC ACID: ORAL, HUMAN LDLO: 430 MG/KG. INHALATION, RAT LC50: 67 PPM (NO2)/4H. INVESTIGATED AS A MUTAGEN & REPRODUCTIVE EFFECTOR.

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

Ecological: ENVIRONMENTAL FATE: NO INFORMATION FOUND. ENVIRONMENTAL TOXICITY: NO INFORMATION FOUND.

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

Waste Disposal Methods: DISPOSE OF CONTAINER & UNUSED CONTENTS IN ACCORDANCE WITH FEDERAL, STATE & LOCAL REQUIREMENTS.

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

Transport Information: DOMESTIC, LAND, DOT: PROPER SHIPPING NAME: NITRIC ACID, RED FUMING
G, TOXIC-INHALATION HAZARD ZONE B; HAZARD CLASS: 8, 5, 6.1. UN/NA: UN2032. PACKING GROUP: I. INFORMATION REPORTED FOR PRODUCT/SIZE: 2.5 L. INTERNATIONAL, WATER, IMO: PROPER SHIPPING NAME: NITRIC ACID, RED FUMING. HAZARD CLASS: 8, 5.1, 6.1. UN/NA: UN2032. PACKING GROUP: I. INFORMATION REPORTED FOR PRODUCT/SIZE: 2.5L.

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

SARA Title III Information: SECTION 302: RQ/TPQ=1000 LBS. SECTION 313: LISTED-YES; CHEM

ICAL CATEGORY-NO. SECTIONS 311/312: ACUTE-YES;
CHRONIC-YES; FIRE-YES; PRESSURE-NO; REACTIVITY-YES.
Federal Regulatory Information:LISTED ON TSCA CHEMICAL INVENTORY.
CERCLA: 1000 LBS. RCRA 261.33: NO; TSCA 8 (D): NO. CHEMICAL WEAPONS
CONVENTION: NO. TSCA 12 (B): NO. CDTA: NO.
State Regulatory Information:NONE SPECIFIED BY RESPONSIBLE PARTY.

===== 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.