

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.

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-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 RE

SPIRATION. 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 LEAST 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 H

azard: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. PROTE

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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 Controls  
/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 (NO<sub>2</sub>)/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  
, 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; CHEMI

CAL 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):

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