N3660 -03 Nitric Acid Page: 3
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## SECTION V - HEALTH HAZARD DATA (Continued)

Short-Term Exposure Limit (STEL): 10 $mg/m^3$ (4 ppm)

Permissible Exposure Limit (PEL): 5 $mg/m^3$ (2 ppm)

Carcinogenicity: NTP: No IARC: No Z List: No OSHA reg: No

Effects of Overexposure

Inhalation and ingestion are harmful and may be fatal.
Inhalation of vapors may cause severe irritation or burns of the respiratory system, pulmonary edema, or lung inflammation.
Inhalation of vapors may cause coughing, chest pains, difficult breathing, and unconsciousness.
Contact with liquid or vapor may cause severe irritation or burns of the skin, eyes, and mucous membranes.
Ingestion may cause nausea, vomiting, and severe burns to mouth, throat, and stomach. Perforation of gastrointestinal tract may result.
Chronic effects of overexposure may include damage to lungs and teeth.

Target Organs

eyes, skin, mucous membranes, respiratory system, lungs, teeth, GI tract

Medical Conditions Generally Aggravated By Exposure

damaged skin, eye disorders, cardiopulmonary disease, lung disease

Routes Of Entry

inhalation, ingestion, eye contact, skin contact

Emergency and First Aid Procedures

CALL A PHYSICIAN.
If swallowed, do NOT induce vomiting; if conscious, give water, milk, or milk of magnesia.
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash clothing before re-use.

## SECTION VI - REACTIVITY DATA

Stability: Stable Hazardous Polymerization: Will not occur

Conditions to Avoid: heat, light, moisture

Incompatibles: strong bases, carbonates, sulfides, cyanides, combustible materials, organic materials, strong reducing agents, most common metals, powdered metals, carbides, ammonium hydroxide, water,

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National Response Center # (800) 424-8802
MATERIAL SAFETY SHEET

BK 98
BK9598
540

N3660 -03 Nitric Acid
Effective: 05/27/88

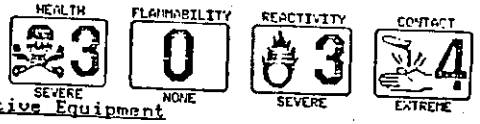
Issued: 07/

## SECTION I - PRODUCT IDENTIFICATION

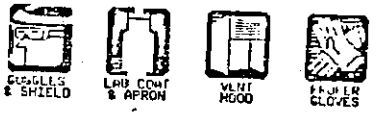
Product Name: Nitric Acid
Formula: $HNO_3$
Formula Wt: 63.01
CAS No.: 7697-37-2
NIOSH/RTECS No.: QU5775000
Common Synonyms: Hydrogen Nitrate; Azotic Acid
Product Codes: 4801,9606,9597,5113,9601,9602,5371,9598,9605,9600,9616

## PRECAUTIONARY LABELLING

BAKER SAF-T-DATA* System




Laboratory Protective Equipment




Precautionary Label Statements

POISON! DANGER!
SPILLAGE MAY CAUSE FIRE OR LIBERATE DANGEROUS GAS
HARMFUL IF INHALED AND MAY CAUSE DELAYED LUNG INJURY
STRONG OXIDIZER - CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE
LIQUID AND VAPOR CAUSE SEVERE BURNS - MAY BE FATAL IF SWALLOWED OR INHALED
Keep from contact with clothing and other combustible materials. Do not store near combustible materials. Do not get in eyes, on skin, on clothing. Do not breathe vapor. Keep in tightly closed container. Use with adequate ventilation. Wash thoroughly after handling. In case of fire, use water spray. In case of spill, neutralize with soda ash or lime.

SAF-T-DATA* Storage Color Code: Yellow (reactive)

## SECTION II - HAZARDOUS COMPONENTS

| Component | % | CAS # |
|---|---|---|

Continued on Page: 2

## SECTION II - HAZARDOUS COMPONENTS (Continued)

| | | |
|---|---|---|
| Nitric Acid | 65-71 | 7697-37-2 |
| Water | 29-35 | 7732-18-5 |

## SECTION III - PHYSICAL DATA

Boiling Point: 121°C ( 250°F)

Melting Point: -42°C ( -44°F)

Specific Gravity: 1.41 ($H_2O$-1)

Solubility($H_2O$): Complete (in all proportions)

Vapor Pressure(mmHg): 9

Vapor Density(air=1): N/A

Evaporation Rate: (Butyl Acetate=1) N/A

% Volatiles by Volume: 100

Appearance & Odor: Clear, colorless liquid. Suffocating acrid odor.

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A

NFPA 704M Rating: 3-0-0 OXY

Flammable Limits: Upper - N/A % Lower - N/A %

Fire Extinguishing Media

Use water spray.

Special Fire-Fighting Procedures

Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode. Move exposed containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool; do not get water inside containers.

Unusual Fire & Explosion Hazards

Strong oxidizer. Contact with other material may cause fire. Reacts with most metals to produce hydrogen gas, which can form an explosive mixture with air.
A violent exothermic reaction occurs with water. Sufficient heat may be produced to ignite combustible materials.

Toxic Gases Produced

nitrogen oxides, hydrogen gas

## SECTION V - HEALTH HAZARD DATA

Threshold Limit Value (TLV/TWA): 5 $mg/m^3$ (2 ppm)

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## SECTION VI - REACTIVITY DATA (Continued)

alcohols

Decomposition Products: oxides of nitrogen, hydrogen

## SECTION VII - SPILL AND DISPOSAL PROCEDURES

Steps to be taken in the event of a spill or discharge

Wear self-contained breathing apparatus and full protective clothing. Stop leak if you can do so without risk. Ventilate area. Neutralize spill with soda ash or lime. With clean shovel, carefully place material into clean, dry container and cover; remove from area. Flush spill area with water. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

J. T. Baker NEUTRASORB® or TEAM* "Low Na+" acid neutralizers are recommended for spills of this product.

Disposal Procedure

Dispose in accordance with all applicable federal, state, and local environmental regulations.

EPA Hazardous Waste Number: D001, D002 (Ignitable, Corrosive Waste)

## SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT

Ventilation: Use general or local exhaust ventilation to meet TLV requirements.

Respiratory Protection: Respiratory protection required if airborne concentration exceeds TLV. At concentrations up to 100 ppm, a chemical cartridge respirator with acid cartridge is recommended. Above this level, a self-contained breathing apparatus is advised.

Eye/Skin Protection: Safety goggles and face shield, uniform, protective suit, neoprene gloves are recommended.

## SECTION IX - STORAGE AND HANDLING PRECAUTIONS

SAF-T-DATA* Storage Color Code: Yellow (reactive)

Special Precautions

Keep container tightly closed. Store separately and away from flammable and combustible materials.
Isolate from incompatible materials.
Keep product out of light.

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## SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (D.O.T.)

| | |
|---|---|
| Proper Shipping Name | Nitric acid (over 40%) |
| Hazard Class | Oxidizer |
| UN/NA | UN2031 |
| Labels | OXIDIZER, CORROSIVE |
| Reportable Quantity | 1000 LBS. |

INTERNATIONAL (I.M.O.)

| | |
|---|---|
| Proper Shipping Name | Nitric acid |
| Hazard Class | 8 |
| UN/NA | UN2031 |
| Labels | CORROSIVE |

N/A = Not Applicable or Not Available

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The information published in this Material Safety Data Sheet has been compil from our experience and data presented in various technical publications. It e user's responsibility to determine the suitability of this information f e adoption of necessary safety precautions. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available J. T. Baker Inc. makes no warranty or representation about the accuracy or completeness nor fitness for purpose of the information contained herein.

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