SECTION 1: Identification

1.1. Identification

Product form: Substance
Substance name: Nitric Acid, 70% w/w
CAS-No.: 7697-37-2
Product code: LC17700
Formula: HNO3

1.2. Recommended use and restrictions on use

Use of the substance/mixture:
- Chemical raw material
- Metal surface treatment
- Printing industry: etch solution
- Laboratory chemical

Recommended use:
- Laboratory chemicals

Restrictions on use:
- Not for food, drug or household use

1.3. Supplier

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number:
CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
- Oxidizing liquids Category 3: H272 - May intensify fire; oxidizer
- Corrosive to metals Category 1: H290 - May be corrosive to metals
- Skin corrosion/irritation Category 1A: H314 - Causes severe skin burns and eye damage
- Serious eye damage/eye irritation Category 1: H318 - Causes serious eye damage

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling
Hazard pictograms (GHS-US):

Signal word (GHS-US): Danger
Hazard statements (GHS-US):
- H272 - May intensify fire; oxidizer
- H290 - May be corrosive to metals
- H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US):
- P210 - Keep away from heat. - No smoking.
- P220 - Keep/Store away from clothing, combustible materials
- P221 - Take any precaution to avoid mixing with combustibles
- P234 - Keep only in original container.
- P260 - Do not breathe mist, spray, vapors.
- P264 - Wash exposed skin thoroughly after handling.
- P280 - Wear eye protection, face protection, protective clothing, protective gloves.
- P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated
Nitric Acid, 70% w/w
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification: None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type: Multi-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric Acid, 70% w/w (Main constituent)</td>
<td>(CAS-No.) 7897-37-2</td>
<td>100</td>
<td>Ox. Liq. 3, H272, Met. Corr. 1, H290, Skin Corr. 1A, H314, Eye Dam. 1, H318</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures


First-aid measures after inhalation: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact: Wash immediately with lots of water (15 minutes)/shower. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

First-aid measures after eye contact: Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Cover eyes aseptically. Take victim to an ophthalmologist.


4.2. Most important symptoms and effects (acute and delayed)


Symptoms/effects after skin contact: Yellow skin. May stain the skin. Caustic burns/corrosion of the skin. Slow-healing wounds.

Symptoms/effects after eye contact: Corrosion of the eye tissue. Permanent eye damage.


4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.
**SECTION 5: Fire-fighting measures**

### 5.1. Suitable (and unsuitable) extinguishing media

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Unsuitable extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapt extinguishing media to the environment.</td>
<td>No unsuitable extinguishing media known.</td>
</tr>
</tbody>
</table>

### 5.2. Specific hazards arising from the chemical

<table>
<thead>
<tr>
<th>Fire hazard</th>
<th>DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Promotes combustion. Reactions involving a fire hazard: see &quot;Reactivity Hazard&quot;.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosion hazard</td>
<td>INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see &quot;Reactivity Hazard&quot;.</td>
</tr>
<tr>
<td>Reactivity</td>
<td>Concentrated solution reacts exothermically with water (moisture). Decomposes on exposure to temperature rise: release of toxic and corrosive gases/vapours (nitrous vapours). Violent to explosive reaction with many compounds e.g.: with (strong) reducers, with (some) bases, with organic material and with combustible materials with risk of spontaneous ignition. Reacts violently with (some) metals. Decomposes slowly on exposure to light: release of toxic and corrosive gases/vapours (nitrous vapours). Violent to explosive reaction with (some) metal powders: release of highly flammable gases/vapours (hydrogen).</td>
</tr>
</tbody>
</table>

### 5.3. Special protective equipment and precautions for fire-fighters

#### Firefighting instructions

Cool tanks/drumis with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

#### Protection during firefighting

Use self-contained breathing apparatus and chemically protective clothing.

**SECTION 6: Accidental release measures**

### 6.1. Personal precautions, protective equipment and emergency procedures

#### General measures

Dike and contain spill. Absorb spillage to prevent material damage.

#### 6.1.1. For non-emergency personnel

|----------------------|---------------------------------------------------------------------------------------------------|

#### 6.1.2. For emergency responders

<table>
<thead>
<tr>
<th>Protective equipment</th>
<th>Equip cleanup crew with proper protection. Avoid breathing mist, spray.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency procedures</td>
<td>Stop leak if safe to do so. Ventilate area.</td>
</tr>
</tbody>
</table>

### 6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

### 6.3. Methods and material for containment and cleaning up

#### For containment

Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Dilute toxic gases/vapours with water spray. Take account of toxic/corrosive precipitation water. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain.

#### Methods for cleaning up

Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite or powdered limestone. Do not take up in combustible material such as: saw dust. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Spill must not return in its original container. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

### 6.4. Reference to other sections

No additional information available
SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling:
- Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Use corrosion-proof equipment. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Never dilute by pouring water to the acid. Always add the acid to the water. Keep away from naked flames/heat. Observe very strict hygiene - avoid contact. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

Hygiene measures:
- Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Incompatible products:

Incompatible materials:
- Combustible material. Direct sunlight. Metals.

Heat-ignition:
- KEEP SUBSTANCE AWAY FROM: heat sources.

Prohibitions on mixed storage:

Storage area:

Special rules on packaging:
- SPECIAL REQUIREMENTS: hermetical. dry. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials:
- SUITABLE MATERIAL: stainless steel. aluminium. glass. MATERIAL TO AVOID: synthetic material.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TWA</td>
<td>ppm</td>
<td>2 ppm (Nitric acid; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)</td>
</tr>
<tr>
<td>ACGIH STEL</td>
<td>ppm</td>
<td>4 ppm (Nitric acid; USA; Short time value; TLV - Adopted Value)</td>
</tr>
<tr>
<td>OSHA PEL (TWA)</td>
<td>mg/m³</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>OSHA PEL (TWA)</td>
<td>ppm</td>
<td>2 ppm</td>
</tr>
<tr>
<td>US IDLH</td>
<td>ppm</td>
<td>25 ppm</td>
</tr>
<tr>
<td>NIOSH REL (TWA)</td>
<td>mg/m³</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>NIOSH REL (TWA)</td>
<td>ppm</td>
<td>2 ppm</td>
</tr>
<tr>
<td>NIOSH REL (STEL)</td>
<td>mg/m³</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>NIOSH REL (STEL)</td>
<td>ppm</td>
<td>4 ppm</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls

Appropriate engineering controls:
- Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Materials for protective clothing:
GIVE LESS RESISTANCE: polyethylene/ethylenevinylalcohol. GIVE POOR RESISTANCE: chloroprene rubber. nitrile rubber. polyethylene. PVA. natural fibres

Hand protection:
Gloves

Eye protection:
Safety glasses

Skin and body protection:
Head/neck protection. Corrosion-proof clothing

Respiratory protection:
Gas mask with filter type B. Gas mask with filter type E. Gas mask with filter type NO. High vapour/gas concentration: self-contained respirator

SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>9.1. Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
</tr>
<tr>
<td>Appearance</td>
</tr>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Odor</td>
</tr>
<tr>
<td>Odor threshold</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>pH solution</td>
</tr>
<tr>
<td>Melting point</td>
</tr>
<tr>
<td>Freezing point</td>
</tr>
<tr>
<td>Boiling point</td>
</tr>
<tr>
<td>Flash point</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
</tr>
<tr>
<td>Vapor pressure</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
</tr>
<tr>
<td>Relative density</td>
</tr>
<tr>
<td>Relative density of saturated gas/air mixture</td>
</tr>
<tr>
<td>Specific gravity / density</td>
</tr>
<tr>
<td>Molecular mass</td>
</tr>
<tr>
<td>Solubility</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Log Pow</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
</tr>
<tr>
<td>Decomposition temperature</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
</tr>
<tr>
<td>Explosion limits</td>
</tr>
<tr>
<td>Explosive properties</td>
</tr>
<tr>
<td>Oxidizing properties</td>
</tr>
</tbody>
</table>

9.2. Other information
Saturation concentration | 10 g/m³ |
VOC content | 0 % |
Nitric Acid, 70% w/w
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Other properties : Gas/vapour heavier than air at 20°C. Hygroscopic. Producing fumes/mist. Physical properties depending on the concentration. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity
Concentrated solution reacts exothermically with water (moisture). Decomposes on exposure to temperature rise: release of toxic and corrosive gases/vapours (nitrous vapours). Violent to explosive reaction with many compounds e.g.: with (strong) reducers, with (some) bases, with organic material and with combustible materials with risk of spontaneous ignition. Reacts violently with (some) metals. Decomposes slowly on exposure to light: release of toxic and corrosive gases/vapours (nitrous vapours). Violent to explosive reaction with (some) metal powders: release of highly flammable gases/vapours (hydrogen).

10.2. Chemical stability
Unstable on exposure to light. Hygroscopic.

10.3. Possibility of hazardous reactions
May react violently with reducing agents.

10.4. Conditions to avoid
Direct sunlight. Incompatible materials.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Nitrogen oxides. oxygen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact
Acute toxicity : Not classified
Skin corrosion/irritation : Causes severe skin burns and eye damage.
  pH: 1 (6 %)
Serious eye damage/irritation : Causes serious eye damage.
  pH: 1 (6 %)
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
  (Based on available data, the classification criteria are not met)
Reproductive toxicity : Not classified
Specific target organ toxicity – single exposure : Not classified
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after skin contact : Yellow skin. May stain the skin. Caustic burns/corrosion of the skin. Slow-healing wounds.
Symptoms/effects after eye contact : Corrosion of the eye tissue. Permanent eye damage.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general : Classification concerning the environment: not applicable.
Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
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Ecology - water

<table>
<thead>
<tr>
<th>Nitric Acid, 70% w/w (7697-37-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>180 mg/l (EC50; 48 h)</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>72 ppm (LC50; 96 h)</td>
</tr>
<tr>
<td>Threshold limit algae 1</td>
<td>&gt; 19 mg/l (EC0)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Nitric Acid, 70% w/w (7697-37-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable. No test data on mobility of the components available.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Nitric Acid, 70% w/w (7697-37-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>&lt;= 1 (BCF)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>-2.3 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Bioaccumulation: not applicable.</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations

Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove for physico-chemical/biological treatment. Remove to an authorized dump (Class I). Treat using the best available techniques before discharge into drains or the aquatic environment.

Additional information

LWCA (the Netherlands): KGA category 01. Hazardous waste according to Directive 2008/98/EC.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description

UN2031 Nitric acid (other than red fuming, with at least 65 percent, but not more than 70 percent nitric acid). B, II

UN-No.(DOT) | UN2031
Proper Shipping Name (DOT) | Nitric acid
other than red fuming, with at least 65 percent, but not more than 70 percent nitric acid

Transport hazard class(es) (DOT) | 8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT) | II - Medium Danger
Hazard labels (DOT) | 8 - Corrosive 5.1 - Oxidizer

DOT Packaging Non Bulk (49 CFR 173.xxx) | 158
**DOT Packaging Bulk (49 CFR 173.xxx)**: 242

**DOT Special Provisions (49 CFR 172.102)**:
- A6 - For combination packaging, if plastic inner packaging are used, they must be packed in tightly closed metal receptacles before packing in outer packaging.
- B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.
- B47 - Each tank may have a reclosing pressure relief device having a start-to-discharge pressure setting of 310 kPa (45 psig).
- IP15 - For UN2031 with more than 55% nitric acid, rigid plastic IBCs and composite IBCs with a rigid plastic inner receptacle are authorized for two years from the date of IBC manufacture.
- T8 - 4 178.274(d)(2) Normal............. Prohibited

**IP15** - For UN2031 with more than 55% nitric acid, rigid plastic IBCs and composite IBCs with a rigid plastic inner receptacle are authorized for two years from the date of IBC manufacture.

**T8** - 4 178.274(d)(2) Normal............. Prohibited

**DOT Packaging Exceptions (49 CFR 173.xxx)**: None

**DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)**: Forbidden

**DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)**: 30 L

**DOT Vessel Stowage Location**:
- D - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

**DOT Vessel Stowage Other**:
- 66 - Stow “separated from” flammable solids, 74 - Stow “separated from” oxidizers, 89 - Segregation same as for oxidizers, 90 - Stow “separated from” radioactive materials

**Other information**: No supplementary information available.

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

**Nitric Acid, 70% w/w (7697-37-2)**

<table>
<thead>
<tr>
<th>Listed on the United States TSCA (Toxic Substances Control Act) inventory</th>
<th>Subject to reporting requirements of United States SARA Section 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ (Reportable quantity, section 304 of EPA’s List of Lists)</td>
<td>1000 lb</td>
</tr>
<tr>
<td>SARA Section 302 Threshold Planning Quantity (TPQ)</td>
<td>1000 lb</td>
</tr>
</tbody>
</table>

**SARA Section 311/312 Hazard Classes**
- Physical hazard - Oxidizer (liquid, solid or gas)
- Physical hazard - Corrosive to metals
- Health hazard - Skin corrosion or irritation
- Health hazard - Serious eye damage or eye irritation

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

| Nitric Acid, 70% w/w | CAS-No. 7697-37-2 | 100% |

#### 15.2. International regulations

**CANADA**

No additional information available

**EU-Regulations**

No additional information available

**National regulations**

No additional information available

#### 15.3. US State regulations
**Nitric Acid, 70% w/w**

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California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

### SECTION 16: Other information

**Revision date**: 01/10/2018

**Full text of H-phrases: see section 16:**

<table>
<thead>
<tr>
<th>H272</th>
<th>May intensify fire; oxidizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>H290</td>
<td>May be corrosive to metals</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
</tbody>
</table>

**NFPA health hazard**: 4 - Materials that, under emergency conditions, can be lethal.

**NFPA fire hazard**: 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

**NFPA reactivity**: 0 - Material that in themselves are normally stable, even under fire conditions.

**NFPA specific hazard**: OX - Materials that posses oxidizing properties.

**Hazard Rating**

**Health**: 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

**Flammability**: 0 Minimal Hazard - Materials that will not burn

**Physical**: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

**Personal protection**: H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

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SDS US LabChem

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