SECTION 1: Identification

1.1. Identification
Product form: Mixtures
Product name: Nitric Acid, 2.0N (2.0M)
Product code: LC17850

1.2. Recommended use and restrictions on use
Use of the substance/mixture: For laboratory and manufacturing use only.
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
Corrosive to metals: H290 - May be corrosive to metals
Skin corrosion/irritation: H314 - Causes severe skin burns and eye damage
Serious eye damage/eye irritation: Category 1

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements
GHS-US labeling
Hazard pictograms (GHS-US): GHS05

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

Precautionary statements (GHS-US): P234 - Keep on only in original container
P260 - Do not breathe mist, vapors, spray
P264 - Wash exposed skin thoroughly after handling
P280 - Wear protective gloves, protective clothing, eye protection, face protection
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 clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a poison center or doctor/physician
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P405 - Store locked up
P406 - Store in corrosive resistant container with a resistant inner liner
P501 - Dispose of contents/container to comply with local, state and federal regulations
**Nitric Acid, 2.0N (2.0M)**

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### 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

### 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>88</td>
<td>Not classified</td>
</tr>
<tr>
<td>Nitric Acid, 70% w/w</td>
<td>(CAS-No.) 7697-37-2</td>
<td>12</td>
<td>Ox. Liq. 3, H272&lt;br&gt;Met. Corr. 1, H290&lt;br&gt;Sk. Corr. 1A, H314&lt;br&gt;Eye Dam. 1, H318</td>
</tr>
</tbody>
</table>

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

### 4: First-aid measures

#### 4.1. Description of first aid measures

First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.

First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

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

Symptoms/effects: Causes severe skin burns and eye damage.

Symptoms/effects after eye contact: Causes serious eye damage.

#### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

### 5: Fire-fighting measures

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


Unsuitable extinguishing media: Do not use a heavy water stream.

#### 5.2. Specific hazards arising from the chemical

Reactivity: Thermal decomposition generates: Corrosive vapors.

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

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

### 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel


Emergency procedures: Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.
6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Absorb spillage to prevent material damage.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Additional hazards when processed: May be corrosive to metals.
Precautions for safe handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist, vapors, spray.
Hygiene measures: Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Comply with applicable regulations.
Storage conditions: Keep only in the original container in a cool, well ventilated place away from: incompatible materials. Keep container closed when not in use.
Incompatible materials: Sources of ignition. Direct sunlight.
Packaging materials: Store in a corrosion resistant container with a resistant inner liner.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
<table>
<thead>
<tr>
<th>Nitric Acid, 70% w/w (7697-37-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH ACGIH TWA (ppm)</td>
<td>2 ppm (Nitric acid; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)</td>
</tr>
<tr>
<td>ACGIH ACGIH STEL (ppm)</td>
<td>4 ppm (Nitric acid; USA; Short time value; TLV - Adopted Value)</td>
</tr>
<tr>
<td>OSHA OSHA PEL (TWA) (mg/m³)</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>OSHA OSHA PEL (TWA) (ppm)</td>
<td>2 ppm</td>
</tr>
<tr>
<td>IDLH US IDLH (ppm)</td>
<td>25 ppm</td>
</tr>
<tr>
<td>NIOSH NIOSH REL (TWA) (mg/m³)</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>NIOSH NIOSH REL (TWA) (ppm)</td>
<td>2 ppm</td>
</tr>
<tr>
<td>NIOSH NIOSH REL (STEL) (mg/m³)</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>NIOSH NIOSH REL (STEL) (ppm)</td>
<td>4 ppm</td>
</tr>
</tbody>
</table>

Water (7732-18-5)
Not applicable

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:
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Hand protection:
Wear protective gloves

Eye protection:
Chemical goggles or face shield

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Gas mask

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Colorless to pale yellow liquid.</td>
</tr>
<tr>
<td>Color</td>
<td>Colourless to light yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic Pungent</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific gravity / density</td>
<td>1.07 g/ml</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>0.99 cSt</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Thermal decomposition generates: Corrosive vapors.

10.2. Chemical stability
Not established.

10.3. Possibility of hazardous reactions
Not established.
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### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials


### 10.6. Hazardous decomposition products

Nitrogen oxides. Thermal decomposition generates : Corrosive vapors.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact

Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Water (7732-18-5)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>≥ 90000 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>90000 mg/kg body weight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects after eye contact : Causes serious eye damage.

### SECTION 12: Ecological information

#### 12.1. Toxicity

<table>
<thead>
<tr>
<th>Nitric Acid, 70% w/w (7697-37-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>LC50 fish 2</td>
</tr>
<tr>
<td>Threshold limit algae 1</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Nitric Acid, 2.0N (2.0M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nitric Acid, 70% w/w (7697-37-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
</tr>
<tr>
<td>ThOD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water (7732-18-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Nitric Acid, 2.0N (2.0M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
</tr>
</tbody>
</table>
Nitric Acid, 2.0N (2.0M)

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<table>
<thead>
<tr>
<th>Nitric Acid, 70% w/w (7697-37-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
</tr>
<tr>
<td>Log Pow</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water (7732-18-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects

Effect on the global warming : No known effects from this product.
GWPmix comment : No known effects from this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN2031 Nitric acid other than (red fuming, with not more than 20 percent nitric acid), 8, II
UN-No.(DOT) : UN2031
Proper Shipping Name (DOT) : Nitric acid other than red fuming, with not more than 20 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

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).
B53 - Packaging must be made of either aluminum or steel.
IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
T8 - 4 178.274(d)(2) Normal.......... Prohibited

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, T is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (Tf) and the maximum mean bulk temperature during transportation (Tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
TP12 - This material is considered highly corrosive to steel.
**DOT Packaging Exceptions (49 CFR 173.xxx)**: None

**DOT Quantity Limitations**
- **Passenger aircraft/rail (49 CFR 173.27)**: 1 L
- **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 Location**: D

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

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

**Nitric Acid, 2.0N (2.0M)**

<table>
<thead>
<tr>
<th>SARA Section 311/312 Hazard Classes</th>
<th>Immediate (acute) health hazard</th>
</tr>
</thead>
</table>

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)**
- RQ (Reportable quantity, section 304 of EPA's List of Lists): 1000 lb
- SARA Section 302 Threshold Planning Quantity (TPQ): 1000 lb
- SARA Section 311/312 Hazard Classes: Immediate (acute) health hazard

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

<table>
<thead>
<tr>
<th>RQ (Reportable quantity, section 304 of EPA's List of Lists)</th>
<th>1000 lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA Section 302 Threshold Planning Quantity (TPQ)</td>
<td>1000 lb</td>
</tr>
<tr>
<td>SARA Section 311/312 Hazard Classes</td>
<td>Immediate (acute) health hazard</td>
</tr>
</tbody>
</table>

#### 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

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

**Other information**: None.

Full text of H-phrases: see section 16:

- **H272**: May intensify fire; oxidizer
- **H290**: May be corrosive to metals
- **H314**: Causes severe skin burns and eye damage
- **H318**: Causes serious eye damage
**Nitric Acid, 2.0N (2.0M)**

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<table>
<thead>
<tr>
<th>NFPA health hazard</th>
<th>3 - Materials that, under emergency conditions, can cause serious or permanent injury.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFPA fire hazard</td>
<td>0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.</td>
</tr>
<tr>
<td>NFPA reactivity</td>
<td>1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.</td>
</tr>
<tr>
<td>NFPA specific hazard</td>
<td>OX - Materials that posses oxidizing properties.</td>
</tr>
</tbody>
</table>

**Hazard Rating**

<table>
<thead>
<tr>
<th>Health</th>
<th>Health Hazard</th>
<th>3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>Flammability Hazard</td>
<td>0 Minimal Hazard - Materials that will not burn</td>
</tr>
<tr>
<td>Physical</td>
<td>Physical Hazard</td>
<td>1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.</td>
</tr>
</tbody>
</table>

**Personal protection**

| H | Splash goggles, Gloves, Synthetic apron, Vapor respirator |

**SDS US LabChem**

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