Material Safety Data Sheet
Nitric acid (65 - 70%)

ACC# 16540

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Nitric acid (65 - 70%)

**Product Grade:** SQ, ExcelaR

**Catalog Numbers:** 29195, 29197, 29198, 29755, 29757

**Synonyms:** Nitric Acid

**Company Identification:**
Fisher Scientific
Part of Thermo Fisher Scientific
Thermo Fisher Scientific India Pvt. Ltd
403-404, B-wing, Delphi,
Hiranandani Business Park,
Powai (E), Mumbai 400076, INDIA.

**For information,** call: 022 – 6680 3001/2, **Call India Toll Free** – 1 800 209 7001

**Emergency Number:** 022-66803004/14

**For CHEMTREC assistance,** call: 800-424-9300 [International]

**For International CHEMTREC assistance,** call: 703-527-3887 [International]

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7697-37-2</td>
<td>Nitric acid</td>
<td>65-70</td>
<td>231-714-2</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>30-35</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Oxidizer: Contact with combustible/organic material may cause fire. Causes severe burns by all exposure routes. May cause pulmonary edema.

**Target Organs** Eyes, Respiratory system, Skin, Teeth, Kidney, Gastrointestinal tract (GI)
Potential Health Effects

Acute Effects

Principle Routes of Exposure

**Eyes** Causes severe burns. May cause blindness or permanent eye damage.

**Skin** Causes severe burns. May be harmful in contact with skin.

**Inhalation** Causes severe burns. May cause pulmonary edema. May be harmful if inhaled.

**Ingestion** Ingestion causes burns of the upper digestive and respiratory tract. May be harmful if swallowed.

**Chronic Effects** Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. May cause adverse kidney effects. Experiments have shown reproductive toxicity effects on laboratory animals.

See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions** Preexisting eye disorders. Skin disorders.

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Section 4 - First Aid Measures

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

**Ingestion** Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Notes to Physician** Treat symptomatically.

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Section 5 - Fire Fighting Measures

**Flash Point** Not applicable

**Method** - No information available.

**Autoignition Temperature** No information available.

**Explosion Limits**

**Upper** No data available

**Lower** No data available

**Oxidizing Properties** Oxidizer
Suitable Extinguishing Media  Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Unsuitable Extinguishing Media  No information available.

Hazardous Combustion Products  No information available.

Sensitivity to mechanical impact  No information available.

Sensitivity to static discharge  No information available.

Specific Hazards Arising from the Chemical
Oxidizer: Contact with combustible/organic material may cause fire. Corrosive Material. Causes severe burns by all exposure routes.
Thermal decomposition can lead to release of irritating gases and vapors. May ignite combustibles (wood paper, oil, clothing, etc.).

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, SHA/NIOSH (approved or equivalent) and full protective gear

NFPA  Health 4  Flammability 0  Instability 0  Physical hazards OX

Section 6 - Accidental Release Measures

Personal Precautions  Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.

Environmental Precautions  Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological Information.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

Section 7 - Handling and Storage

Handling  Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Keep away from clothing and other combustible materials. Do not breathe vapors/dust. Do not ingest. Contents under pressure.

Storage  Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials.
Section 8 - Exposure Controls, Personal Protection

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Exposure Limits

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>TWA: 2 ppm</td>
<td>(Vacated) TWA: 2 ppm</td>
<td>IDLH: 25 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL: 4 ppm</td>
<td>(Vacated) TWA: 5 mg/m3</td>
<td>TWA: 2 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 4 ppm</td>
<td>STEL: 10 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 10 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 5 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 4 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 10 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

Component | Quebec | Mexico OEL (TWA) | Ontario TWA EV |
--- | --- | --- | --- |
Nitric acid | TWA: 2 ppm | TWA: 2 ppm | TWA: 2 ppm |
|         | TWA: 5.2 mg/m3 | TWA: 5 mg/m3 | TWA: 5 mg/m3 |
|         | STEL: 4 ppm | STEL: 4 ppm | STEL: 4 ppm |
|         | STEL: 10 mg/m3 | STEL: 10 mg/m3 | STEL: 10 mg/m3 |

Legend

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Section 9 - Physical and Chemical Properties

Physical State Liquid
Appearance Clear Colorless, Light yellow
Odor strong Acrid
Odor Threshold No information available.
pH 1.0 (0.1M)
Vapor Pressure 0.94 kPa (20°C)
Vapor Density No information available.
Viscosity No information available.
Boiling Point/Range 120.5°C / 248.9°F
Melting Point/Range -41 °C / -41.8 °F
Decomposition temperature No information available.
Flash Point Not applicable
Evaporation Rate No information available.
Specific Gravity 1.40
Solubility No information available.
log Pow No data available
Molecular Weight 63.02
Molecular Formula HNO3

Section 10 - Stability and Reactivity

Stability Oxidizer: Contact with combustible/organic material may cause fire.
Conditions to Avoid Incompatible products. Combustible material. Excess heat.
Incompatible Materials Strong bases, Reducing agents, Organic materials, Aldehydes, Alcohols, Cyanides, Metals, Powdered metals, Ammonia, Strong reducing agents, Combustible material
Hazardous Decomposition Products Nitrogen oxides (NOx)
Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions None under normal processing.

Section 11 - Toxicological Information

Acute Toxicity
Product Information
Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>Not listed</td>
<td>Not listed</td>
<td>130 mg/m3 (Rat) 4 h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7 mg/L (Rat) 1 h</td>
</tr>
</tbody>
</table>

Irritation Causes severe burns by all exposure routes

Toxicologically Synergistic Products
No information available.

Chronic Toxicity
Carcinogenicity There are no known carcinogenic chemicals in this product
Sensitization No information available.

Mutagenic Effects No information available.

Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects No information available.

Teratogenicity Teratogenic effects have occurred in experimental animals.

Other Adverse Effects See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

Section 12 - Ecological Information

Ecotoxicity
Do not empty into drains. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>Not listed</td>
<td>72 mg/L LC50 96 h</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>-2.3</td>
</tr>
</tbody>
</table>

Section 13 - Disposal Considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
Section 14 - Transport Information

DOT
UN-No UN2031
Proper Shipping Name NITRIC ACID
Hazard Class 8
Subsidiary Hazard Class 5.1
Packing Group II

TDG
UN-No UN2031
Proper Shipping Name NITRIC ACID
Hazard Class 8
Subsidiary Hazard Class 5.1
Packing Group II

IMDG/IMO
UN-No UN2031
Proper Shipping Name NITRIC ACID
Hazard Class 8
Subsidiary Hazard Class 5.1
Packing Group II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7697-37-2 is listed on the TSCA inventory.
CAS# 10102-44-0 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs

CAS# 7697-37-2: 1000 lb final RQ; 454 kg final RQ  
CAS# 10102-44-0: 10 lb final RQ (Releases to the air in amounts less than 1000 pounds per 24 hour)

SARA Section 302 Extremely Hazardous Substances

CAS# 7697-37-2: 1000 lb TPQ  
CAS# 10102-44-0: 100 lb TPQ

SARA Codes

CAS # 7697-37-2: immediate, delayed, fire.

Section 313

This material contains Nitric acid (CAS# 7697-37-2, >90%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 7697-37-2 is listed as a Hazardous Substance under the CWA. CAS# 10102-44-0 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

CAS# 7697-37-2 is considered highly hazardous by OSHA.  
CAS# 10102-44-0 is considered highly hazardous by OSHA.

STATE

CAS# 7697-37-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 10102-44-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

O C

Risk Phrases:

R 35 Causes severe burns.
R 8 Contact with combustible material may cause fire.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36 Wear suitable protective clothing.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)
Fisher Scientific

CAS# 7697-37-2: 1
CAS# 10102-44-0: 1
CAS# 7732-18-5: No information available.

**Canada - DSL/NDSL**
- CAS# 7697-37-2 is listed on Canada's DSL List.
- CAS# 10102-44-0 is listed on Canada's DSL List.
- CAS# 7732-18-5 is listed on Canada's DSL List.

**Canada - WHMIS**
This product has a WHMIS classification of E, C, D1A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**
- CAS# 7697-37-2 is listed on the Canadian Ingredient Disclosure List.
- CAS# 10102-44-0 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Additional Information**

**MSDS Creation Date:** October 2013
**Revision Date:** October 2018

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.*