

---

**1. Product and Company Identification**

---

**Product Name** Nitric Acid 67%  
**Synonym(s)** Azotic acid, Hydrogen nitrate, Nitryl hydroxide, Nitral, Engraver's acid  
**CAS #** Mixture  
**Product Use** Industrial applications  
**Supplier information** PVS Benson  
1012 Gore Road  
Freelton, ON L0R1K0 CA  
Phone: 1-800-265-0014  
Emergency Services (24 hours / 7 days ): 1-519-821-0215

---

**2. Hazards Identification**

---

**Emergency overview** DANGER -- CORROSIVE  
CAUSES SKIN AND EYE BURNS.  
OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.

**Potential short term health effects**

**Routes of exposure** Eye, Skin contact, Inhalation, Ingestion.

**Eyes** Causes chemical burns. May cause blindness.

**Skin** Causes chemical burns.

**Inhalation** Harmful if inhaled. May cause respiratory tract irritation or chemical burns.

**Ingestion** Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.

**Target organs** Eyes. Respiratory system. Skin.

**Chronic effects** Prolonged or repeated exposure to dilutions can cause drying, defatting and dermatitis.

**Signs and symptoms** The product causes burns of eyes, skin and mucous membranes. Symptoms may include redness, oedema, drying, defatting and cracking of the skin.

**Potential environmental effects** See section 12.

---

**3. Composition/Information on ingredients**

---

| Components  | CAS #     | Percent  |
|-------------|-----------|----------|
| Nitric Acid | 7697-37-2 | 60 - 100 |

---

**4. First Aid Measures**

---

**First aid procedures**

**Eye contact** Immediately flush with cool water. Remove contact lenses, if applicable, and continue flushing for 20 minutes. Obtain medical attention immediately.

**Skin contact** Immediately flush with cool water for 20 minutes while removing contaminated clothing and shoes. Discard or wash well before reuse. Obtain medical attention if irritation persists.

**Inhalation** If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention. If breathing has stopped, trained personnel should administer CPR immediately.

**Ingestion** Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.

**Notes to physician** Treat patient symptomatically.

**General advice** Keep out of reach of children. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Wear impervious gloves and chemical splash goggles.

---

**5. Fire-fighting Measures**

---

**Flammable properties** Not flammable by WHMIS criteria.  
Not flammable, but reacts with most metals to form flammable hydrogen gas.  
Oxidizing agent, may cause spontaneous ignition of combustible materials.

---

|   |   |
|---|---|
| <b>Extinguishing media</b>                        |   |
| <b>Suitable extinguishing media</b>               | Use water on fires involving nitric acid to dilute and to absorb liberated oxides of nitrogen.  |
| <b>Unsuitable extinguishing media</b>             | Do not use dry chemical powders containing sodium bicarbonate, potassium bicarbonate, sodium carbonate, calcium carbonate, ammonium phosphate or ammonium sulfate. Nitric acid can react violently with these extinguishing agents. |
| <b>Protection of firefighters</b>                 |   |
| <b>Specific hazards arising from the chemical</b> | Container may explode in heat of fire. Firefighters should wear a self-contained breathing apparatus.   |
| <b>Protective equipment for firefighters</b>      | Firefighters should wear full protective clothing including self contained breathing apparatus.   |
| <b>Hazardous combustion products</b>              | May include and are not limited to: Oxides of nitrogen. Toxic fumes.  |
| <b>Explosion data</b>                             |   |
| <b>Sensitivity to mechanical impact</b>           | Not available.  |
| <b>Sensitivity to static discharge</b>            | Not available.  |

## 6. Accidental release measures

|                                  |  |
|----------------------------------|--|
| <b>Personal precautions</b>      | Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.  |
| <b>Environmental precautions</b> | Prevent entry into waterways, sewers, basements or confined areas.   |
| <b>Methods for containment</b>   | Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk.   |
| <b>Methods for cleaning up</b>   | Should not be released into the environment. Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use. |

## 7. Handling and storage

|                 |   |
|-----------------|---|
| <b>Handling</b> | Ensure adequate ventilation. Use good industrial hygiene practices in handling this material. Do not get in eyes, on skin or on clothing. Keep away from combustible material. Keep container tightly closed. Wash thoroughly after handling. |
| <b>Storage</b>  | Keep out of reach of children. Keep away from heat, open flames or other sources of ignition. Store in a tightly closed container in a cool, dry, well ventilated and dark place away from incompatible materials.                            |

## 8. Exposure controls/Personal protection

|   |  |              |
|---|--|--------------|
| <b>Occupational exposure limits</b>     |  |              |
| <b>US. ACGIH Threshold Limit Values</b> |  |              |
| <b>Components</b>                       | <b>Type</b>  | <b>Value</b> |
| Nitric Acid (CAS 7697-37-2)             | STEL   | 4 ppm        |
|   | TWA  | 2 ppm        |
| <b>Exposure limits</b>                  | See above  |              |
| <b>Engineering controls</b>             | Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.   |              |
| <b>Personal protective equipment</b>    |  |              |
| <b>Eye/Face protection</b>              | Chemical splash goggles.   |              |
| <b>Hand protection</b>                  | Impervious gloves. Confirm with reputable supplier first.  |              |
| <b>Skin and body protection</b>         | Use of an impervious apron is recommended.   |              |
| <b>Respiratory protection</b>           | If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.<br>Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2). |              |
| <b>General hygiene considerations</b>   | Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.  |              |

---

## 9. Physical and chemical properties

---

|   |                                 |
|---|---------------------------------|
| <b>Appearance</b>                                     | Liquid                          |
| <b>Colour</b>   | white to light yellow           |
| <b>Form</b>   | Liquid                          |
| <b>Odour</b>  | Sweet / pungent                 |
| <b>Odour threshold</b>                                | Not available.                  |
| <b>Physical state</b>                                 | Liquid.                         |
| <b>pH</b>   | 1.0, conc: 0.1M (solution)      |
| <b>Freezing point</b>                                 | -41 °C (-41.8 °F)               |
| <b>Boiling point</b>                                  | 121.6 °C (250.88 °F)            |
| <b>Pour point</b>                                     | Not available.                  |
| <b>Evaporation Rate</b>                               | Not available                   |
| <b>Flash point</b>                                    | Not applicable                  |
| <b>Auto-ignition temperature</b>                      | Not applicable                  |
| <b>Flammability limits in air, upper, % by volume</b> | Not applicable                  |
| <b>Flammability limits in air, lower, % by volume</b> | Not applicable                  |
| <b>Vapour pressure</b>                                | 56 hPa @ 20°C                   |
| <b>Vapour density</b>                                 | 2.17 (Air = 1)                  |
| <b>Specific gravity</b>                               | 1.4134                          |
| <b>Partition coefficient (n-octanol/water)</b>        | -2.3 @ 25°C                     |
| <b>Solubility (Water)</b>                             | Complete                        |
| <b>Relative density</b>                               | 1.4134 g/cm <sup>3</sup> @ 20°C |
| <b>Viscosity</b>                                      | Not available.                  |
| <b>VOC</b>  | Not available                   |
| <b>Percent volatile</b>                               | Not available                   |

---

## 10. Stability and reactivity

---

|   |   |
|---|---|
| <b>Reactivity</b>                         | Very reactive. Reacts vigorously with alkaline material. Reacts with soft metals producing flammable hydrogen gas. Corrosive to metals. |
| <b>Possibility of hazardous reactions</b> | Hazardous polymerisation does not occur.  |
| <b>Chemical stability</b>                 | Stable under recommended storage conditions.  |
| <b>Conditions to avoid</b>                | Heat. Do not mix with other chemicals.  |
| <b>Incompatible materials</b>             | Caustics. Reducing agents. Combustible materials. Soft metals.  |
| <b>Hazardous decomposition products</b>   | May include and are not limited to: Oxides of nitrogen. Toxic fumes.  |

---

## 11. Toxicological information

---

### Toxicological data

| Components                  | Species | Test results        |
|-----------------------------|---------|---------------------|
| Nitric Acid (CAS 7697-37-2) |         |                     |
| <b>Acute</b>                |         |                     |
| <i>Inhalation</i>           |         |                     |
| LC50                        | Mouse   | 244 ppm, 30 Minutes |
|                             |         | 67 mg/L, 4 Hours    |
|                             | Rat     | 2500 ppm, 1 hours   |
|                             |         | 1250 ppm, 4 hours   |
|                             |         | 138 ppm, 30 Minutes |

| Components          | Species       | Test results    |
|---------------------|---------------|-----------------|
|                     |               | 65 ppm, 4 Hours |
|                     |               | 3.5 mg/l/4h     |
|                     |               | 3.2 mg/l/4h     |
| <i>Oral</i><br>LD50 | Not available |                 |

#### Effects of acute exposure

|   |   |
|---|---|
| <b>Eye contact</b>                                  | Causes chemical burns. May cause blindness.                                   |
| <b>Skin contact</b>                                 | Causes chemical burns.  |
| <b>Inhalation</b>                                   | Harmful if inhaled. May cause respiratory tract irritation or chemical burns. |
| <b>Ingestion</b>                                    | Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.  |
| <b>Sensitisation</b>                                | Non-hazardous by WHMIS criteria.  |
| <b>Chronic effects</b>                              | Non-hazardous by WHMIS criteria.  |
| <b>Carcinogenicity</b>                              | Non-hazardous by WHMIS criteria.  |
| <b>Mutagenicity</b>                                 | Non-hazardous by WHMIS criteria.  |
| <b>Reproductive effects</b>                         | Non-hazardous by WHMIS criteria.  |
| <b>Teratogenicity</b>                               | Non-hazardous by WHMIS criteria.  |
| <b>Name of Toxicologically Synergistic Products</b> | Not available.  |

## 12. Ecological information

**Ecotoxicity** Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

#### Ecotoxicological data

| Components                  | Species | Test results  |
|-----------------------------|---------|---|
| Nitric Acid (CAS 7697-37-2) |         |   |
| Crustacea                   | LC50    | Cockle ( <i>Cerastoderma edule</i> )<br>330 - 1000 mg/L, 48 hours             |
| Fish                        | LC50    | Starfish ( <i>Asterias rubens</i> )<br>100 - 330 mg/L, 48 hours               |
| <b>Aquatic</b>              |         |   |
| Crustacea                   | LC50    | Green or European shore crab ( <i>Carcinus maenas</i> )<br>180 mg/L, 48 hours |

**Persistence and degradability** Not available.

**Bioaccumulation/accumulation** Not available

**Mobility in environmental media** Not available.

**Environmental effects** Harmful to aquatic life.

**Aquatic toxicity** Not available.

**Partition coefficient**

Nitric Acid 67% -2.3, @ 25°C

**Chemical fate information** Not available.

## 13. Disposal considerations

**Disposal instructions** Waste must be disposed of in accordance with federal, state/provincial and local environmental control regulations.

**Waste from residues / unused products** Not available

**Contaminated packaging** Not available

## 14. Transport information

### Transportation of Dangerous Goods (TDG - Canada)

**Basic shipping requirements:**

**UN number** UN2031  
**Proper shipping name** NITRIC ACID, other than red fuming, with not more than 70 per cent nitric acid  
**Hazard class** 8  
**Packing group** II

TDG



## 15. Regulatory information

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

**Canada WHMIS Ingredient Disclosure: Threshold limits**

Nitric Acid (CAS 7697-37-2) 1 %

**WHMIS status** Controlled  
**WHMIS classification** Class C - Oxidizing Material, Class E - Corrosive Material

**WHMIS labeling**



**Inventory Status**

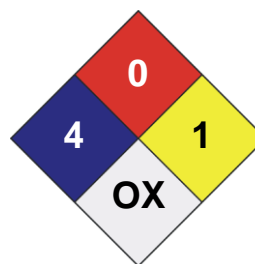
| Country(s) or region | Inventory Name                      | On Inventory (Yes/No)* |
|----------------------|-------------------------------------|------------------------|
| Canada               | Domestic Substances List (DSL)      | Yes                    |
| Canada               | Non-Domestic Substances List (NDSL) | No                     |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

## 16. Other information

| LEGEND   |   |
|----------|---|
| Severe   | 4 |
| Serious  | 3 |
| Moderate | 2 |
| Slight   | 1 |
| Minimal  | 0 |

|                            |     |
|----------------------------|-----|
| <b>HEALTH</b>              | / 4 |
| <b>FLAMMABILITY</b>        | 0   |
| <b>PHYSICAL HAZARD</b>     | 1   |
| <b>PERSONAL PROTECTION</b> | X   |



**Disclaimer**

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

**Issue date** 09-September-2014  
**Effective date** 15-November-2014  
**Expiry date** 15-November-2017

**Prepared by**  
**Other information**

Dell Tech Laboratories Ltd. Phone: (519) 858-5021  
This MSDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.