CHEMFAX™
Manufacturer of Specialty Chemicals

# Safety Data Sheet

| Section 1. Identification | | |
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| **Product Identifier** | **Nitric Acid** | **Version: 6**<br>**Effective Date:** 25 January 2021 |
| **Other Means Of Identification** | Azotic acid; Engraver's acid; Aqua fortis, Nitric Acid 42 BE | |
| **Initial Supplier Identifier** | Chemfax Products Ltd.<br>11444 – 42 Street SE<br>Calgary, AB T2C 5C4<br>Tel: 403-287-2055 | |
| **Recommended Use and Restrictions On Use** | Industrial acid, chemical intermediate, metal treatment. No restrictions. | |
| **Product Family** | Inorganic acid | |
| **Emergency Phone** | 1-855-887-2055 Monday - Friday 8:00am - 4:30pm MST | |

| Section 2. Hazard Identification | |
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| **Hazard Classification** |  |
| **Physical Hazards** | Oxidizing Liquids – Category 2<br>Corrosive to Metals – Category 1 |
| **Health Hazards** | Skin Corrosion/Irritation – Category 1A<br>Eye Damage/Irritation – Category 1<br>Specific Target Organ Toxicity, (Single Exposure) – Category 3 |
| **Signal Word** | Danger |
| **Hazard Statement** | May intensify fire; oxidizer. May be corrosive to metals. Causes sever skin burns and serious eye damage. May cause respiratory irritation, may cause drowsiness or dizziness. |
| **Precautionary Prevention Statement** | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from clothing and other combustible materials. Wear protective gloves, clothing, eye and face protection. Keep in original packaging only.<br>Do not inhale dust or mist. Wash hands thoroughly after handling. Use only outdoors, or in a well-ventilated area. |
| **Precautionary Response Statement** | Absorb spillage to prevent material-damage.<br>IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |

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| | IF ON SKIN (or hair): Immediately remove all contaminated clothing. Rinse skin with water or shower if on clothing. Wash contaminated clothing before reuse.<br>IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a doctor.<br>Specific treatment: Treat symptomatically. Do not induce vomiting unless directed by medical personnel.<br>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor. |
| **Precautionary Storage Statement** | Store in a corrosion resistant container with a resistant inner liner. Store locked up. Store in a well-ventilated place. Keep container tightly closed. |
| **Precautionary Disposal Statement** | Dispose of contents/container in accordance with local regulations. |
| **Other Hazards** | None |

## Section 3. Composition / Information on Ingredients

| Chemical Name | Common Name or Synonyms | CAS NO. and Other Unique Identifiers | % by weight |
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| Nitric Acid | Azotic acid | 7697-37-2 | 70 |

## Section 4. First-Aid Measures

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| **Eye Contact** | Flush eyes with water for 30 minutes until no chemical remains. Seek immediate medical attention. |
| **Skin Contact** | Flush area with water. If irritation persists, seek medical attention. Launder clothing before reuse. |
| **Inhalation** | Remove victim to fresh air. If there is difficulty breathing, seek immediate medical attention. |
| **Ingestion** | Rinse mouth with water. Do not induce vomiting. Lay victim on left side to prevent aspiration of any vomit. Seek immediate medical attention. |
| **Most Important Symptoms and Effects Both Acute and Delayed** | Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or oesophagus should be investigated. |

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| **Immediate Medical Attention and Special Treatment** | Treat symptomatically. |

| **Section 5. Fire-Fighting Measures** | |
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| **Suitable and Unsuitable Extinguishing Media** | Use DRY chemicals, CO2, alcohol foam or water spray. |
| **Hazardous Combustion Products** | Oxides of nitrogen.<br>NOTE: Oxidiser. Containers should be cooled with water spray to prevent rupture due to pressure build up. Reacts with metals to generate flammable hydrogen gas. Slightly flammable in the presence of reducing agents, combustible materials and organic materials. |
| **Specific Hazards Arising From the Product** | Thermal decomposition can lead to release of irritating gases and vapours. NThe product causes burns of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.). |
| **Special Protective Equipment and Precautions For Fire-Fighters** | Fire-fighters should wear self-contained breathing apparatus and full protective clothing. Use water spray to cool containers and structures exposed to fire. |

| **Section 6. Accidental Release Measures** | |
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| **Personal Precautions, Protective Equipment and Emergency Procedures** | Chemical resistant (rubber, neoprene) gloves, coveralls, footwear and safety glasses.<br>Isolate area and evacuate unnecessary personnel. Ensure adequate ventilation. |
| **Environmental Precautions** | Do not allow material to enter surface drains and water courses |
| **Methods and Materials For Containment and Clean-Up** | Isolate spill, stop leak if safe to do so. Evacuate area. Contain spill with sand or other inert material. Neutralize with lime slurry, limestone or soda ash. Pick up solids and place in an appropriate container for disposal. Flush area with water to remove trace residues. |

| **Section 7. Handling and Storage** | |
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| **Precautions For Safe Handling** | Corrosive and oxidizing material – handle with care. Empty containers may contain hazardous residues. |
| **Conditions For Safe Storage** | Store in a cool, dry, well ventilated place. Store away from incompatible materials. Will corrode metals and many plastic materials. 304 or 347 stainless steel are acceptable materials. Tanks should be |

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| | vented and painted in a white or light, heat-reflecting colour. Gaskets should be Teflon, all pumps, valves, meters, etc., should be of compatible material. Containers should have secondary containment. |

## Section 8. Exposure Controls / Personal Protection

| Control Parameters | TWA: 8 Hr | STEL: 15 min | Ceiling | IDLH * |
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| Nitric Acid | 2 ppm<br>OSHA | 4 ppm<br>OSHA | | 25 ppm |
| | * Immediately Dangerous to Life and Health | | | |
| **Exposure Controls** | Local exhaust ventilation | | | |
| **Appropriate Engineering Controls** | 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. | | | |
| **Individual Protective Measures** | If exposure limits are exceeded: | | | |
| **Eye / Face Protection** | Safety glasses | | | |
| **Skin Protection** | Chemical resistant (neoprene) gloves, coveralls and footwear | | | |
| **Respiratory Protection** | An air purifying respirator fitted with acid gas cartridges must be worn. NOTE: cartridges with charcoal must not be used as oxidizing agents will react with the charcoal. | | | |

## Section 9. Physical and Chemical Properties

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| **Appearance** | Brownish / yellow liquid |
| **Odour** | Pungent antiseptic odour |
| **Odour Threshold** | Not available. |
| **pH** | <1 |
| **Flash Point** | > 100 $^{o}$C |
| **Boiling Point and Boiling Range** | 121 $^{o}$C |
| **Melting Point and Freezing Point** | -20 $^{o}$C |
| **Evaporation Rate** | <1 |
| **Flammability (solid, gas)** | Not applicable |
| **Upper and Lower Flammability or Explosive Limits** | No data |
| **Vapour Pressure** | 6.9 mmHg @ 20 $^{o}$C |
| **Vapour Density** | 2.2 |
| **Relative Density** | 1.41 |
| **Solubility** | Miscible |

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| **Partition co-efficient, n-Octanol/Water** | No data |
| **Auto-ignition Temperature** | No data |
| **Decomposition Temperature** | No data |
| **Viscosity** | No data |

| **Section 10. Stability and Reactivity** | |
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| **Reactivity** | Oxidizer: Contact with combustible/organic material may cause fire. |
| **Chemical Stability** | Stable |
| **Possibility of Hazardous Reactions** | Will not occur |
| **Conditions to Avoid** | None know |
| **Incompatible Materials** | Alkalis, reducing agents, combustible materials, metals, organic materials, acids, and moisture. NOTE: Corrosive to mild metals such as copper, aluminium, brass, iron and mild steel. Not corrosive to 304L or 316 stainless steel. Will release flammable and potentially explosive hydrogen gas on contact with amphoteric metals. |
| **Hazardous Decomposition Products** | Oxides of Nitrogen. |

| **Section 11. Toxicological Information** | | | |
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| **Component Toxicity** | **LD50 Oral** | **LD50 Dermal** | **LC50 Inhalation** |
| Nitric Acid | - | - | 7 mg/L, 1h (Rat) |
| **Likely Routes of Exposure** | | | |
| **Skin:** | Concentrated nitric acid chars the tissue with a characteristic yellow colour. Causes severe burns. Severe and fatal skin burns can occur with necrosis and scarring. | | |
| **Eyes:** | May cause severe burns and tissue damage leading to blindness. | | |
| **Inhalation:** | Causes severe respiratory irritation. Exposure can cause coughing, chest pains and difficulty breathing. Vapours may cause pulmonary oedema. Death due to breathing failure may occur immediately or be delayed depending on the severity of the exposure. | | |
| **Ingestion:** | May cause severe pain in the mouth, chest and abdomen, leading to coughing, vomiting and collapse. Ingestion may cause gastritis possibly progressing to necrosis or haemorrhage. | | |
| **Acute Toxicity Estimates (ATE)** | Oral: ATE > 2000 mg/kg.<br>Dermal: ATE > 2000 mg/kg.<br>Vapor: ATE > 20 mg/l. | | |

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| **STOT (Specific Target Organ Toxicity) – Single Exposure** | Not classified |
| **Aspiration Toxicity** | Causes severe burns |
| **STOT (Specific Target Organ Toxicity) – Repeated Exposure** | Not classified |
| **Skin Corrosion / Irritation** | Causes severe burns |
| **Serious Eye Damage / Irritation** | Causes severe burns |
| **Respiratory or Skin Sensitization** | Not classified |
| **Carcinogenicity** | Not listed. |
| **Reproductive Toxicity** | |
| - **Sexual Function and Fertility** | Not classified |
| - **Development of Offspring** | Not classified |
| - **Effects on or via Lactation** | Not classified |
| **Germ Cell Mutagenicity** | Not classified |
| **Interactive Effects** | Not classified |
| **Other Information** | None known |

| **Section 12. Ecological Information** | |
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| **Ecotoxicity** | LC50: 72 mg/L (Gambusia affinis) 96 hr |
| **Persistence and Degradability** | Will not persist |
| **Bioacumulative Potential** | Not available |
| **Biodegradability** | Not available |
| **Mobility in Soil** | Not available |
| **Special Remarks** | Toxic to aquatic life. |
| **Other Adverse Effects** | None known |

| **Section 13. Disposal Considerations** | |
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| **Disposal Considerations** | Dispose of contents / container in accordance with local regulations. |

| Section 14. Transport Information | |
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| **UN Number** | 2031 |
| **UN Proper Shipping Name** | Nitric Acid |
| **Transport Hazard Class(es)** | 8 |
| **Packaging Group** | II |
| **Environmental Hazards** | Not applicable |
| **Bulk Transport** | Not applicable |
| **Special Precaution** | Not applicable |
| **DOT Erg#** | 157 |
| **Limited quantity** | 1L |

| Section 15. Regulatory Information | |
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| **Canada – DSL Inventory** | All components of this product are either on the Domestic Substances List (DSL), Non-Domestic Substances List (NDSL), or exempt |
| **TSCA** | All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt |
| **Additional Information** | None |

| Section 16. Other Information | |
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| **NFPA Rating** | Health-3/ Flammability-0/Reactivity-1/Special Hazard-Not applicable |
| **HMIS Rating** | Health-3/Flammability-0/Reactivity-1/Personal Protection-See Section 8. |
| **Prepared by:** | Chemfax Products Ltd., Technical Department |
| **Date Prepared:** | 28 September, 2012 |
| **Date of Latest Revision:** 25 January 2021 | |

**Disclaimer**

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