

MATERIAL SAFETY DATA SHEET

Revision #1

Section 1 - Product Identification & Use

Product Name: **Nitric Acid**
WHMIS Classification: Class C, Oxidizing Liquids
Class E, Corrosive Liquids
TDG Classification: Nitric Acid Solution, UN 2031, Class 8, II
Supplier: Advance Chemicals Ltd.
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Section 2 - Hazardous Ingredients

Hazardous Components	%(w/w)	C.A.S. No.	LD ₅₀ & LC ₅₀
Nitric Acid	40-70	7697-37-2	Inhalation (Rat) 130 mg/kg

Section 3 - Physical Data

Physical state: liquid
Liquid density: 1.41g/mL
pH: <1
Vapour pressure: 6.9mmHg @ 20°C
Boiling point: 121°C
Freezing point: -35°C
Solubility in water: 100%
Evaporation rate: no data
Odour & Appearance: Brownish, yellow liquid solution. There is a pungent antiseptic like odour above the open liquid.

Section 4 - Fire or Explosion Hazard

Flammability: The product is not considered to be flammable.
Extinguishing media: Use dry chemicals, or all purpose foam by manufacturer's recommended techniques for large fires. Use water to cool fire exposed containers to prevent vapour build-up and rupture. Water may also be used to flush spills away from dangerous exposures.
Hazardous Combustion Products: Wear self-contained breathing apparatus. Product reacts with most metals to produce hydrogen gas, which may accumulate to produce explosive and/or flammable mixtures with air.

Section 5 - Reactivity Data

Stability: Stable.
Incompatible substances: Alkalies, reducing agents, combustible materials, organic materials, acids and moisture.
Polymerization: Will not occur.
Conditions to Avoid: Will generate heat when mixed with alkalies. Will decompose to produce oxides of nitrogen, will also release flammable and potentially explosive hydrogen gas on contact with amphoteric metals.
Hazardous Combustion Products: Wear self-contained breathing apparatus. This product is not considered flammable, but heat may cause decomposition resulting in the production of hydrogen gas, and oxides of nitrogen which can form flammable or explosive mixtures.

Section 6 - Toxicological Properties

Acute Toxicity: No data found.
Skin contact: Corrosive. Concentrated contacts will cause charring of the tissue with a yellow colouration. Severe and fatal skin burns can occur with necrosis and scarring.
Eye contact: Corrosive to eye tissue and may cause severe damage and blindness.
Inhalation: Irritation of mucous membranes, coughing, chest pains, difficulty breathing. Vapours can cause pulmonary edema. Death due to breathing failure may occur almost immediately or within several hours to several days depending on severity.
Ingestion: Pain in swallowing, intense thirst, abdominal pain, nausea, may be fatal if swallowed. Ingestion may cause gastritis possibly progressing to necrosis or hemorrhage.

Section 7 - Preventative Measures

Personal Protective Equipment: Avoid contact with skin and eyes. Wear chemical protective gloves, goggles and face shield, rubber apron and boots. Eye wash fountains and safety shower facilities should be provided nearby for emergency use.
Respiratory protection: For acid vapours and mist, use an NIOSH/MSHA approved air purifying, dust, mist and particulate respirator.
Ventilation Requirements: This product should be used in a well-ventilated area at all times. If the hydrochloric acid solution is to be heated or a mist will be generated during product application, then local exhaust ventilation will be necessary.

Action to take for spills & leaks: Wear chemical protective clothing, rubber gloves and suitable respiratory protection. Small spills should be wiped up with absorbent material and disposed of in government approved waste containers. The spilled product can be neutralized with soda ash or baking soda and wet down with a little water to form a slurry. The spill area may then be flushed with large quantities of water. Larger spills should be contained by diking with sand, soil or other absorbent, non-combustible material, then transferred into approved waste containers for proper disposal. Keep product out of sewers, storm drains, surface run-off water and soil. Restrict access to non-protected personnel. Comply with all government regulations on spill reporting, handling and disposal of waste.

Disposal methods: Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, provincial and local regulatory agencies to ascertain proper disposal procedures.

Note: Empty containers can have residues, gasses and mists, and are subject to proper waste disposal as mentioned above.

Storage & Handling Precautions: Warning, harmful or fatal if swallowed. Causes eye, skin and respiratory irritation. Avoid contact with eyes and repeated contact with skin and clothing. Do not ingest. Keep away from sources of heat and open flame. Keep container tightly closed when not in use. Store upright in a cool, dry, well-ventilated place away from incompatible materials. Do not use pressure to empty container. Wash thoroughly after handling. Use with adequate ventilation. Tanks must be grounded and ventilated. Ensure proper electrical grounding procedures are in place during product transfer.

Repair and Maintenance Precautions: Do not cut, grind, weld or drill in, on or near this container.

Section 8 - First Aid Measures

If inhaled: Remove victim to fresh air. Give artificial respiration if not breathing. Get immediate emergency medical attention.

In case of eye contact: Immediately flush eyes with clean water for at least twenty (20) minutes, lifting the upper and lower eyelids occasionally. Get immediate emergency medical attention. Do not transport victim until the recommended flushing period has been completed, unless eye flushing can be continued during transport to the nearest emergency medical treatment facility.

In case of skin contact: Immediately flush skin with plenty of clean running water for at least fifteen (15) minutes. Remove contaminated clothing and shoes. If irritation persists after washing, get immediate medical attention. Wash clothes before re-use.

In case of ingestion or swallowing: If victim is conscious and not convulsing, give one or two glasses of water to dilute material. Immediately contact the local poison control centre. Vomiting should only be induced under the direction of a physician or poison control centre. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in the vomitus. Rinse mouth and administer more water. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS VICTIM. GET IMMEDIATE EMERGENCY MEDICAL ATTENTION.

Section 9 - Preparation Information

Advance Chemicals Limited expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose with respect to the product provided. The information contained herein is offered only as a guide to the handling of this specific product, and has been prepared in good faith by technically knowledgeable personnel. This M.S.D.S. is not intended to be all-inclusive, and the manner and conditions of use may involve other and additional considerations.

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