

SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product name: NITRIC ACID

Synonyms, Trade Names:
Aqua Fortis, Azotic Acid

Manufacturer:
Avantor Performance Materials, Inc.
3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Contact Person:

Product No.: 9604, V471, V231, V230, V077,
6623, 2712, 2707, 2706, 2704, H988, 5876, 5856,
5801, 5796, 1409, 9761, 9670, 9618, 9617, 9616,
9615,

Telephone:
Customer Service: 855-282-6867

Emergency telephone:
24 Hour Emergency: 908-859-2151
Chemtrec: 800-424-9300

2 HAZARDS IDENTIFICATION

Emergency Overview:

Appearance:

Color: Colorless to slightly yellow
Form : Liquid
Odor: Pungent

Signal words DANGER!

Potential Health Effects:

General Corrosive. Causes severe skin and eye burns. Causes digestive tract burns. Mist or vapor extremely irritating to eyes and respiratory tract.

Potential Physical / Chemical Effects:

Oxidizing material. Contact with combustible material may cause fire. May be corrosive to metals.

Inhalation:

Corrosive. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

Skin:

Corrosive. Causes severe skin burns.

Eye:

Corrosive. Causes severe eye burns. Vapor or spray may cause eye damage, impaired sight or blindness.

Ingestion:

Corrosive. May cause burns of the gastrointestinal tract if swallowed.

Chronic Effects:

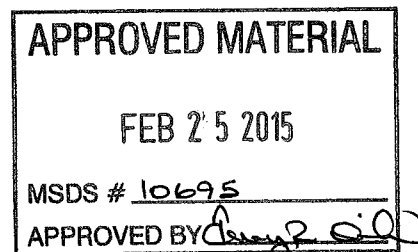
Corrosive. Prolonged contact causes serious tissue damage.

Routes of Exposure:

Skin and/or eye contact., Inhalation, Ingestion

Environment:

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.



3 COMPOSITION / INFORMATION ON INGREDIENTS

General information:

Hazardous Component(s):

Chemical name	CAS-No.	Concentration
NITRIC ACID	7697-37-2	65 - 70%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4 FIRST AID MEASURES

General:	Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
Inhalation:	Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.
Skin contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.
Ingestion:	Call a physician or poison control center immediately. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to the physician:	
Treatment:	Treat symptomatically. Symptoms may be delayed.

5 FIRE-FIGHTING MEASURES

Extinguishing media:	Water spray, fog, CO2, dry chemical, or regular foam.
Unsuitable extinguishing media:	None known.
Unusual Fire & Explosion Hazards:	Oxidizing Contact with combustible material may cause fire. Fire may produce irritating, corrosive and/or toxic gases.
Special fire fighting procedures:	Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.
Protective Measures:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

- Personal precautions:** Keep unauthorized personnel away. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Environmental precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
- Spill Cleanup Methods:** Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if possible without any risk. Do not absorb in sawdust or other combustible materials. Absorb spill with vermiculite or other inert material. Collect in a non-combustible container for prompt disposal. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.
- Notification Procedures:** Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

7 HANDLING AND STORAGE

- Handling:** Keep away from combustible material. Do not get in eyes, on skin, on clothing. Wash hands thoroughly after handling. Do not eat, drink or smoke when using the product. Do not taste or swallow. Never add water to acid! Never pour water into acid/base. Dilute by slowly pouring the product into water while stirring.
- Storage:** Do not store in metal containers. Store away from heat and light. Keep away from combustible material. Keep containers closed when not in use. Store in a cool, dry place. Keep container in a well-ventilated place.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

Chemical name	Type	Exposure Limit values	Source
NITRIC ACID	STEL	4 ppm 10 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	2 ppm 5.2 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
NITRIC ACID	STEL	4 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	2 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
NITRIC ACID	STEV	4 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	TWAEV	2 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
NITRIC ACID	TWA	2 ppm 5.2 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	STEL	4 ppm 10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)

Protective Measures:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Respiratory Protection:

In case of inadequate ventilation use suitable respirator. Chemical respirator with acid gas cartridge.

Eye protection:

Wear safety glasses with side shields (or goggles) and a face shield.

Skin and Body Protection:

Wear suitable protective clothing.

Hygiene measures:

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before

eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical State:	Liquid
Form:	Liquid
Color:	Colorless to slightly yellow
Odor:	Pungent
Odor Threshold:	No data available.
pH:	1 (0.1 molar aqueous solution)
Freezing point:	-42 °C
Boiling Point:	122 °C
Flash Point:	Not applicable
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.
Flammability Limit - Upper (%)-:	No data available.
Flammability Limit - Lower (%)-:	No data available.
Vapor pressure:	6.4 kPa
Vapor density (air=1):	2.5
Relative density:	1.41 (20 °C)
Solubility(ies)	
Solubility in Water:	Soluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Autoignition Temperature:	No data available.
Decomposition Temperature:	No data available.
Viscosity:	No data available.
Explosive properties:	No data available.
Oxidizing properties:	No data available.

10 STABILITY AND REACTIVITY

Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur. Decomposes on heating.
Conditions to avoid:	Reacts violently with strong alkaline substances. Avoid contact with strong reducing agents. Excessive heat. Contact with incompatible materials.
Incompatible materials:	Alcohols. Reducing agents. Metals. Alkalies.
Hazardous decomposition products:	Nitrogen Oxides By heating and fire, corrosive vapors/gases may be formed.

11 TOXICOLOGICAL INFORMATION

Product:

Acute Toxicity (Oral): No data available.

Acute Toxicity (Inhalation):

Name	Test results
NITRIC ACID	LC 50 (Rat, 4 h): 65 mg/l

Inhalation: May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

Ingestion: May cause burns of the gastrointestinal tract if swallowed.

Skin corrosion/irritation: Causes severe skin burns.

Serious eye damage/eye irritation: Causes serious eye damage.

Respiratory sensitizer/Skin sensitizer: Not a skin nor a respiratory sensitizer.

Carcinogenicity: This substance has no evidence of carcinogenic properties.

Mutagenesis: No mutagenic components identified

Reproductive toxicity: No components toxic to reproduction

Other effects: None known.

12 ECOLOGICAL INFORMATION

General information: Not Applicable

Ecotoxicity: The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Product:

Chronic Toxicity(Fish): No data available.

Chronic Toxicity(Aquatic invertebrates): No data available.

Acute toxicity(Aquatic plants): No data available.

Specified substance(s):

Acute toxicity(Fish):

Name	Test results
NITRIC ACID	LC 50 (Fish, 48 h): 100 - 330 mg/l Mortality

Acute toxicity(Aquatic invertebrates):

Name	Test results
NITRIC ACID	LC 50 (Cockle (Cerastoderma edule), 48 h): 330 - 1,000 mg/l Mortality LC 50 (Green or European shore crab (Carcinus maenas), 48 h): 180 mg/l Mortality

Persistence and degradability: Expected to be readily biodegradable.

Bioaccumulative potential: No data available on bioaccumulation.

Mobility: The product is water soluble and may spread in water systems.

13 DISPOSAL CONSIDERATIONS

Disposal methods: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Uncleaned Empty Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14 TRANSPORT INFORMATION

TDG

UN number: UN 2031
 Proper Shipping Name: NITRIC ACID
 Transport hazard class(es): 8
 Subsidiary risk label: -
 Packing group: II
 Label(s): 8

IMDG - International Maritime Dangerous Goods Code

UN number: UN 2031
 UN proper shipping name: NITRIC ACID
 Transport hazard class(es): 8, 5.1
 Subsidiary risk label: 5.1
 Packing group: II
 Label(s): 8, 5.1
 Marine Pollutant: Not Regulated
 EmS No.: F-A; S-Q

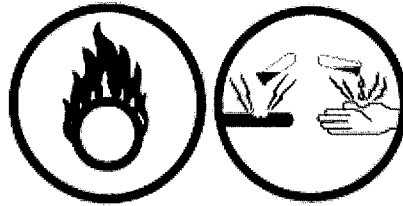
IATA

UN number: UN 2031
 Proper Shipping Name: Nitric acid
 Transport hazard class(es): 8, 5.1
 Subsidiary risk label: 5.1
 Packing group: II
 Label(s): 8, 5.1

15 REGULATORY INFORMATION

Canadian Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS Classification:



C, E: Oxidizing Material, Corrosive Material

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16 OTHER INFORMATION

Revision Information: ARGLO_INVSTS
Issue date: 06-04-2014
SDS No.:
Disclaimer:

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