

SAFETY DATA SHEET

Issue Date 30-Apr-2019

Revision Date: 27-Oct-2021

Version 3

1. Identification

Product identifier**Product Name:** Nitric Acid 42'**Other means of identification****Product Code:** 1272**Synonyms:** Aqua Fortis, Azotic Acid, Engravers acid, Hydrogen Nitrate, Spirit of Niter**UN/ID No:** UN2031**Recommended use of the chemical and restrictions on use****Recommended Use:** Industrial, Manufacturing or Laboratory use.**Restrictions on Use:** None known**Company Name:**

Anderson Chemical Company, 325 S Davis Ave, Litchfield, MN 55355 (320-693-2477)

Emergency Telephone:

CHEMTREC (US): 1-800-424-9300

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Oxidizing liquids	Category 3
Corrosive to metals	Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements**Signal word:** Danger**Hazard statements:**

Toxic if inhaled

Causes severe skin burns and eye damage

May intensify fire; oxidizer

May be corrosive to metals

**Precautionary Statements - Prevention:**

Use only outdoors or in a well-ventilated area
 Do not breathe dusts or mists
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection
 Keep away from heat
 Keep/Store away from clothing/ combustible materials
 Take any precaution to avoid mixing with combustibles
 Keep only in original container

Precautionary Statements - Response:

Immediately call a POISON CENTER or doctor
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 Wash contaminated clothing before reuse
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Immediately call a POISON CENTER or doctor
 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
 In case of fire: Use water spray to extinguish
 Absorb spillage to prevent material damage

Precautionary Statements - Storage:

Store in a well-ventilated place. Keep container tightly closed
 Store locked up
 Store in corrosion resistant container with a resistant inner liner

Precautionary Statements - Disposal:

Dispose of contents/container to an approved waste disposal plant

Unknown Acute toxicity:

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Other Information

Not applicable

3. Composition/information on ingredients

Chemical name	CAS No	Weight-%
Nitric acid	7697-37-2	66.9-67.9
Water	7732-18-5	Balance

Any concentration shown as a range is due to batch variation or the exact percentage has been withheld as a trade secret.

4. First-aid measures**Description of first aid measures****General advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the

substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure. Rest and medical observation are essential. May cause asthma-like reactions (RADS).

Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
Skin contact	IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. Get immediate medical advice/attention. Destroy or thoroughly clean contaminated shoes.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention. Do not attempt to neutralize.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms	Redness. Burning. May cause blindness. Coughing and/ or wheezing. Chronic exposure or high concentrations may cause erosion of teeth. Contact will discolor skin yellow-brown depending on exposure which will wear off after a period of time.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.
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5. Fire-fighting measures

Suitable Extinguishing Media	Use water. Do not use dry chemicals or foams. CO ₂ or Halon may provide limited control. Flood fire area with water from a distance. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Dry chemical. Foam. CAUTION: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	These substances will accelerate burning when involved in a fire. Some may decompose explosively when heated or involved in a fire. May ignite combustibles (wood paper, oil, clothing, etc.). Runoff may create fire or explosion hazard. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Contact of concentrated nitric acid with combustible materials may increase the hazard from fire and may lead to an explosion.
Hazardous combustion products	Nitrogen oxides (NO _x).
Explosion Data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	Yes.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. Do not move cargo or vehicle if cargo has been exposed to heat. Oxidizer. May ignite combustibles (wood paper, oil, clothing, etc.). Move containers from fire area if you can do it without risk. Fight fire from maximum distance or

use unmanned hose holders or monitor nozzles. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See section 8 for more information. Stop leak if you can do it without risk. Corrosive material. Use personal protective equipment as required.

Other information Keep combustibles (wood, paper, oil, etc) away from spilled material. DO NOT GET WATER INSIDE CONTAINERS. Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Dike far ahead of spill; use dry sand to contain the flow of material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Stop leak if you can do it without risk. Keep out of drains, sewers, ditches and waterways.

Methods for cleaning up Dike far ahead of liquid spill for later disposal. Neutralize with soda ash (sodium carbonate) or lime over area of spill. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid contact with skin, eyes or clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Handle in accordance with good industrial hygiene and safety practice. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Take off contaminated clothing and wash before reuse. When diluting, always add the product to water. Never add water to the product. Reacts violently with water. Do not breathe vapor or mist.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Do not store near combustible materials. Store in accordance with the particular national regulations. Store in accordance with local regulations. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Materials Organic material. Combustible material. Hydrocarbons. Acids. Bases. Oxidizing agent. Metals. Alcohols. Alkali. Strong bases. Strong acids. Reducing agent. Cyanide compounds. Sulfides. Carbides.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here. .

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
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Nitric acid 7697-37-2	STEL: 4 ppm TWA: 2 ppm	TWA: 2 ppm TWA: 5 mg/m ³ (vacated) TWA: 2 ppm (vacated) TWA: 5 mg/m ³ (vacated) STEL: 4 ppm (vacated) STEL: 10 mg/m ³	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³
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Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Face protection shield. Tight sealing safety goggles.

Hand protection Wear suitable gloves. Impervious gloves. Liquid may penetrate the gloves. Frequent change is advisable. Remove gloves safely without contacting the material.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Wear fire/flammable resistant/retardant clothing. Discard contaminated footwear that cannot be cleaned. Routinely wash work clothing to remove contaminants.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

General hygiene considerations Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical State: Liquid
Appearance: Clear
Color: Colorless to light yellow
Odor: Acrid
Odor Threshold: No information available

pH: No information available
Salt Out Point: No information available
Melting Point/Freezing Point: -32 °C / -25 °F
Boiling Point/Boiling Range: No information available
Flash Point: No information available
Evaporation Rate (BuAc=1): No information available
Flammability (solid, gas): No information available
Flammability Limits in Air: No information available
Vapor Pressure (mm Hg): No information available
Vapor density (Air =1): No information available
Specific Gravity (H₂O=1): 1.409
Water Solubility: Soluble
Solubility(ies): No information available
Partition Coefficient (n-octanol/water): No information available

Autoignition Temperature:	No information available
Decomposition Temperature:	No information available
Kinematic Viscosity:	No information available
Dynamic Viscosity:	No information available

Other information	
Explosive properties	No information available
Oxidizing properties	No information available
Molecular Weight:	63.01

10. Stability and reactivity

Reactivity	Oxidizer. Contact with water will generate considerable heat. Contact with metals may evolve flammable hydrogen gas. Forms nitrous gases in reaction with metals. Reacts violently with strong alkaline substances. Contact of concentrated product with combustible materials may increase the hazard from fire and may lead to an explosion.
Chemical stability	May cause fire or explosion; strong oxidizer. May discolor on exposure to light and air. Decomposes on heating.
Possibility of hazardous reactions	This is a strong oxidizer and will react vigorously or explosively with many materials including fuels.
Conditions to avoid	Heat, flames and sparks. Incompatible materials. Exposure to air or moisture over prolonged periods. Excessive heat.
Incompatible Materials	Organic material. Combustible material. Hydrocarbons. Acids. Bases. Oxidizing agent. Metals. Alcohols. Alkali. Strong bases. Strong acids. Reducing agent. Cyanide compounds. Sulfides. Carbides.
Hazardous decomposition products	Thermal decomposition can lead to release of irritating and toxic gases and vapors. When heated to decomposition, emits toxic Nitrogen Oxides fumes and Hydrogen Nitrate. Will react with water or steam to produce heat and toxic and corrosive fumes. Nitrogen oxides (NO _x).

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

Eye contact

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact

Specific test data for the substance or mixture is not available. (based on components). Causes severe burns.

Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Redness. Burning. May cause blindness. Coughing and/ or wheezing. Chronic exposure or
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high concentrations may cause erosion of teeth. Contact will discolor skin yellow-brown depending on exposure which will wear off after a period of time.

Numerical measures of toxicity

Acute Toxicity:

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (inhalation-dust/mist) 0.74 mg/l

Component Information

Chemical name	Oral LD ₅₀ :	Dermal LD ₅₀ :	LC ₅₀ (Lethal Concentration):
Nitric acid 7697-37-2	-	-	= 2500 ppm (Rat) 1 h
Water 7732-18-5	> 90 mL/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Classification based on individual ingredients of the mixture. Causes severe burns.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Other Adverse Effects:	No information available.

12. Ecological information

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and Degradability:	No information available.
Bioaccumulation:	There is no data for this product.

Component Information

Chemical name	Partition Coefficient:
Nitric acid 7697-37-2	-2.3

Mobility:	No information available.
Other Adverse Effects:	No information available.

13. Disposal considerations

Waste treatment methods**Waste from residues/unused products**

Should not be released into the environment. Dispose of in accordance with local, state, and national regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging

Do not reuse empty containers.

US EPA Waste Number (product as supplied) D001.

14. Transport information

DOT

UN/ID No UN2031
Proper shipping name NITRIC ACID
Hazard Class 8
Subsidiary Class 5.1
Packing Group II
Description UN2031, NITRIC ACID, 8 (5.1), PGII



15. Regulatory information

International Inventories

Chemical name	TSCA	AICS	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS
Nitric acid 7697-37-2	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present
Water 7732-18-5	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

AICS - Australian Inventory of Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 and later calendar years will need to be consistent with updated hazard classifications.

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	SARA Extremely Hazardous Substances TPQ
Nitric acid 7697-37-2	1000 lb	1000 lb	1000 lb TPQ

Clean Water Act (CWA)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nitric acid 7697-37-2	1000 lb	-	-	X

OSHA - Process Safety Management - Highly Hazardous Chemicals

This product contains one or more substances regulated under Process Safety Management (29 CFR 1910.119).

Chemical name	OSHA - Process Safety Management - Highly Hazardous Chemicals
Nitric acid 7697-37-2	500 lb TQ >=94.5% by weight

Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS)

This product contains one or more substances regulated under the Chemical Facility Anti-Terrorism Standards (6 CFR 27).

Chemical name	Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS)
Nitric acid 7697-37-2	Release - Toxic Theft - Explosives/Improvised Explosive Device Precursors

16. Other information

Prepared By: HSE Department
Issue Date: 11-May-2012
Revision Date: 27-Oct-2021
Revision Note: Format change. Reviewed and Re-issued.

Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet