

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Nitric Acid 20% Solution
CAS number	7697-37-2
Synonyms	Hydrogen nitrate; Aqua fortis; Azotic acid; Salpetersaeure

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Laboratory chemicals.
-----------------	-----------------------

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to Metals	Category 1
Acute Toxicity - Inhalation	Category 4
Skin Corrosion	Category 1A
Serious Eye Damage	Category 1

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard statements

May be corrosive to metals.
Causes severe skin burns and eye damage.
Harmful if inhaled.

Precautionary statements

Prevention: Keep only in original container. Wear protective gloves/protective clothing/eye protection/face protection. Wash skin thoroughly after handling. Avoid breathing mist or vapors. Use only outdoors or in a well-ventilated area.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

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/physician.

IF ON SKIN/HAIR: Remove/Take off all contaminated clothing immediately. Rinse skin with water/shower. Wash contaminated clothing before reuse.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Spills: Absorb spillage to prevent material damage.

Storage: Store locked up. Store in corrosive-resistant container with a resistant inner liner.

Disposal: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Nitric Acid	Aqua fortis; Azotic acid	7697-37-2	20%
Water	Aqua; H ₂ O	7732-18-5	80%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
In case of skin contact	Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.
In case of eye contact	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/physician.
If swallowed	Make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Do not attempt to neutralise. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Corrosive liquid. May be fatal if swallowed and enters airways. Causes severe skin burns and eye damage. Causes serious eye damage. Potential symptoms of overexposure are irritation of the eyes, mucous membranes and skin, dental erosion, bronchitis, pneumonitis, delayed pulmonary edema.

4.3 Indication of any immediate medical attention and special treatment needed

Immediately call a POISON CENTER or physician. Specific treatment is urgent (Wash areas of contact with water immediately).

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	For this substance/mixture, no limitations of extinguishing agents are given.

5.2 Specific hazards arising from the substance or mixture

Not combustible. Strong oxidizer. Contact of concentrated nitric acid with combustible materials may increase the hazard from fire and may lead to an explosion. Ambient fire may liberate hazardous vapours. Nitrogen oxides (NO_x).

5.3 Special protective equipment and precautions for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Flash Point No information available.

Autoignition Temperature No information available.

Explosion limits

Upper No data available.

Lower No data available.

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	1	OX

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

6.2 Environmental precautions

Prevent from reaching drains, sewers, and waterways.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Take up with liquid-absorbent and neutralising material. Dispose of properly. Clean up affected area.

6.4 Reference to other sections

See section 2 for full list of hazard and precaution statements. For disposal, see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist, vapors, spray. Avoid contact with eyes and skin.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep only in the original container in a cool, well-ventilated place away. Store in corrosive-resistant container with a resistant inner liner. Keep container closed when not in use. Protect from freezing and physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials.

Incompatibilities

Strong bases, metallic powders, carbides, Hydrogen Sulfide, turpentine, and combustible organics.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value	
Nitric acid [C≤70%]	(Vacated) TWA	2 ppm	5 mg/m ³
	(Vacated) STEL	4 ppm	10 mg/m ³
	TWA	2 ppm	5 mg/m ³

US. ACGIH Threshold Limit Values

Component	Type	Value
Nitric acid [C≤70%]	TWA	2 ppm
	STEL	4 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value	
Nitric acid [C≤70%]	TWA	2 ppm	5 mg/m ³
	STEL	4 ppm	10 mg/m ³
	IDLH	25 ppm	

Biological occupational exposure limits

No information available.

8.2 Exposure controls

Appropriate engineering controls

Use only outdoors or in a well-ventilated area. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limit.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles.

Skin protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products.

Body Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. If the TLV is exceeded, a full-face chemical cartridge respirator may be worn up to 50 times the TLV or the maximum use concentration specified by the respirator supplier, whichever is less.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless to a pale yellow
Odor	Strong acrid
Odor Threshold	No information available
pH	< 1
Melting Point/Range	Approximately 0°C
Boiling Point/Range	Approximately 100°C
Evaporation Rate	No information available
Flammability (solid)	No information available
Flammability or explosive limit	No information available
Upper	
Lower	
Vapor Pressure	No information available
Vapor Density	No information available
Density	No information available
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No information available
Autoignition Temp	No information available
Decomposition Temp	No information available
Viscosity	No information available
Molecular Formula	HNO ₃
Molecular Weight	63.013 g/mol

VOC Content(%) No information available
Oxidizing properties No information available

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Strong oxidizing agent.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions

Heat and incompatibilities.

10.4 Conditions to avoid

Heating. Incompatible materials.

10.5 Incompatible materials

Strong bases, metallic powders, carbides, Hydrogen Sulfide, turpentine, and combustible organics.

10.6 Hazardous decomposition products

Nitrogen oxides (NO_x).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitric acid [C≤70%]	430 mg/kg (Human)	-	67 ppm (Rat) 4h

Skin corrosion/irritation

Causes severe skin burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

May cause irritation of the nose, throat, and respiratory tract including coughing and choking. Higher concentrations or prolonged exposure to vapors of nitric acid may lead to pneumonia or pulmonary edema.

Germ cell mutagenicity

No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Nitric acid	7697-37-2	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

No information available.

Specific target organ toxicity - repeated exposure

No information available.

Reproductive toxicity

No information available.

Chronic effects

No information available.

11.2 Additional Information

No information available.

SECTION 12: Ecological information

12.1 Toxicity

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

12.2 Persistence and degradability

Readily degradable in the environment.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

Aqueous solution has high mobility in soil.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-No	UN2031
Proper Shipping Name	Nitric acid
Hazard Class	8
Packing Group	II

IMDG

UN-No	UN2031
Proper Shipping Name	Nitric acid
Hazard Class	8
Packing Group	II

IATA

UN-No	UN2031
Proper Shipping Name	Nitric acid
Hazard Class	8
Packing Group	II

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)
Listed, Nitric acid (CAS #7697-37-2), RQ: 1000 lb.

SARA 304 Emergency release notification
Listed, Nitric acid (CAS #7697-37-2), RQ: 1000 lb.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Listed, Nitric acid (CAS #7697-37-2), RQ: 1000 lb.

SARA 311/312 Hazardous

See Section 2 for more information.

SARA 313 (TRI reporting)

Listed, Nitric acid (CAS #7697-37-2).

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA - Hazardous Substances)

Listed, Nitric acid (CAS #7697-37-2), RQ: 1000 lb.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed, Nitric acid (CAS #7697-37-2).

US. New Jersey Worker and Community Right-to-Know Act

Listed, Nitric acid (CAS #7697-37-2).

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, Nitric acid (CAS #7697-37-2).

California Proposition 65

Not listed.

SECTION 16: Other information

Issue date: 12/04/2012

Revision 1: 08/07/2013

Revision 2: 12/08/2023

Revision 3: 02/08/2024

Revision 4: 01/09/2025

SECTION 17: Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.