Version: 3.5

Revision date: 12.07.2024

Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

SECTION 1: Identification

Product identifier

Trade name/designation:	Nitric acid 69.0-70.0% BAKER ANALYZED® A.C.S. Reagent
Product No.:	9601
Synonyms:	none

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

Recommended use	For Laboratory, Research or Manufacturing Use.
Uses advised against	Not determined.

Details of the supplier of the safety data sheet

Supplier

Avantor Performance Materials, LLC.

Street	100 Matsonford Rd, Suite 200
Postal code/City	Radnor, PA 19087, United States
Telephone	+1-855-282-6867
Telefax	+1-610-573-2610

Emergency phone number

Telephone	+1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA and Canada)

Preparation Information
Product Information Compliance

E-mail	SDS@avantorsciences.com

SECTION 2: Hazard identification

Classification of the substance or mixture

Label elements

Physical hazards

Oxidising liquid, category 3
Substance or mixture corrosive to metals, category 1

Health hazards

Skin corrosion, category 1A
Serious eye damage, category 1
Acute toxicity, category 3, inhalation

Hazard pictograms

Signal word: Danger

Hazard statements

H272 - May intensify fire; oxidiser.
H290 - May be corrosive to metals.
H331 - Toxic if inhaled.
H314 - Causes severe skin burns and eye damage.

Precautionary statements
Prevention:
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 - Keep/Store away from clothing/combustible materials.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P234 - Keep only in original container.

Response:
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363 - Wash contaminated clothing before reuse.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER/doctor.
P390 - Absorb spillage to prevent material damage.

Storage:
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P406 - Store in a corrosion-resistant container with a resistant inner liner.

Disposal:
P501 - Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC)
none

SECTION 3: Composition/information on ingredients

Substances

not applicable

Mixtures

Substance name	Identifier	Concentration
Nitric acid	CAS No.: 7697-37-2	65 - 70%

SECTION 4: First aid measures

General information

Do not leave affected person unattended. Causes poorly healing wounds. Risk of blindness. Wash contaminated clothing prior to re-use. When in doubt or if symptoms are observed, get medical advice.

In case of inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Seek medical advice immediately.

In case of skin contact

Remove contaminated, saturated clothing immediately. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure. If skin irritation occurs: Get medical help. If extensive skin contact: get medical help immediately and kept under medical surveillance (hospitalization). Seek medical advice immediately.

After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. Transport to the ophthalmologist or eye clinic as soon as possible. Continue rinsing with isotonic saline solution during transport, alternatively with water.

In case of ingestion

Immediately call a POISON CENTER/doctor. Never give anything by mouth to an unconscious person or a person with cramps. Rinse mouth thoroughly with water. Spit out all liquid. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

After inhalation: Shortness of breath. Cough. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. Cyanosis (blue colored blood) After skin contact: Erythema (Redness). May cause severe damage with formation of corneal ulcers. Occurrence of severe chemical burns resembling a burn. Yellowish to brown permanent discoloration. After eye contact: Conjunctival oedema (chemosis). Corneal damage. Risk of blindness. After ingestion: Burning/pain and tumescence in the mouth/throat/oesophagus/stomach. Vomiting. Circulatory collapse. Gastric perforation.

Indication of any immediate medical attention and special treatment needed

After inhalation, immediate application of glucocorticoids (inhalative), administration of oxygen and immobilization of the affected person are indicated. If necessary, all further measures of pulmonary edema prophylaxis. After vapor inhalation cardiovascular and pulmonary functions should be carefully monitored. After decontamination of the skin pain treatment and shock prophylaxis. After swallowing: Do not induce vomiting. No oral administration of fluids, activated charcoal, or laxatives, no gastric lavage, but aspiration of the fluid from the stomach via a nasogastric tube, avoiding intubation, if this is possible within 60 minutes.

SECTION 5: Fire fighting measures

Extinguishing media

Suitable extinguishing media

ABC-powder
Carbon dioxide (CO_2).
Dry sand
Nitrogen

Extinguishing media which must not be used for safety reasons

Water spray.
Full water jet

Specific hazards arising from the chemical

Non-combustible corrosive substances (liquid).
Non-combustible toxic substances.
Oxidizing liquids
Oxidizer, allows chemicals to burn without an air supply.
Lung damage.
Causes severe skin burns and eye damage.
In case of fire may be liberated:

Nitrogen oxides (NOx)

Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Protective equipment and precautions for firefighters:
Wear a self-contained breathing apparatus and chemical protective clothing.
Co-ordinate fire-fighting measures to the fire surroundings.
In case of fire: Evacuate area.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Wear personal protection equipment (refer to section 8). Avoid contact with skin, eyes and clothes. Remove victim out of the danger area. Stop leak if safe to do so. Provide adequate ventilation. First Aid, decontamination, treatment of symptoms. For emergency responders: In case of fire: Wear self-contained breathing apparatus. Wear full chemical protective clothing. Substance is non-flammable. Adapt fire and explosion protection measures to the combustible substances in the area.

Environmental precautions

Avoid release to the environment. Do not allow to enter into surface water or drains. Cover drains. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.

Methods and material for containment and cleaning up

Large spills: Dike or dam to contain for later disposal. Take up mechanically, placing in appropriate containers for disposal. Take precautionary measures against static discharges. Small spills: Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Dispose according to legislation.

Additional information

Personal protection equipment (PPE): see section 8 Disposal information: see section 13

SECTION 7: Handling and storage

Precautions for safe handling

Advices on safe handling
Use extractor hood (laboratory).
Use only in well-ventilated areas.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Avoid contact with eyes and skin.
Use personal protective equipment as required.
Measures to prevent fire, aerosol and dust generation
Usual measures for fire prevention.
Use only in well-ventilated areas.
Measures required to protect the environment
Do not empty into drains.
Collect spillage.

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Conditions for safe storage, including any incompatibilities

Recommended storage temperature: 15-25 °C
Store in a well-ventilated place. Keep container tightly closed. Packaging materials: High density polyethylene (HDPE) Glass Unsuitable container/equipment material: Metal container

SECTION 8: Exposure controls/personal protection

Control parameters

Ingredient (Designation)	Source	Country	parameter	Limit value
Nitric acid	NIOSH	US	LTV	5 mg/m³ - 2 ppm
Nitric acid	NIOSH	US	STV	10 mg/m³ (1) - 4 ppm (1)
Nitric acid	OSHA	US	LTV	5 mg/m³ - 2 ppm

Engineering controls

Appropriate engineering controls
Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protection equipment (PPE)
Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

Eye/face protection
Eye glasses with side protection

Skin protection
Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

By short-term hand contact	
Suitable material:	Butyl caoutchouc (butyl rubber)
Thickness of the glove material:	0,30 mm
Breakthrough time	60-120 min

By long-term hand contact	
Suitable material:	Butyl caoutchouc (butyl rubber)/FKM (fluoro rubber)
Thickness of the glove material:	0,70 mm
Breakthrough time	240-480 min

Respiratory protection
Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Additional information
Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls
no data available

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

(a) Appearance	
Physical state:	liquid
Color:	colorless to light yellow
(b) Odor:	pungent
(c) Odor threshold:	no data available

Safety relevant basic data

(d) pH:	1
(e) Melting point/freezing point:	-42 °C
(f) Initial boiling point and boiling range:	122 °C (1013 hPa)
(g) Flash point:	no data available
(h) Evaporation rate:	no data available
(i) Flammability (solid, gas):	Not applicable
(j) Flammability or explosive limits	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
(k) Vapor pressure:	no data available
(l) Vapor density:	no data available
(m) Density:	1.41 g/cm³ (20 °C)
(n) Solubility(ies)	
Water solubility:	no data available
Soluble (g/L) in Ethanol:	no data available
(o) Partition coefficient: n-octanol/water:	no data available
(p) Auto-ignition temperature:	no data available
(q) Decomposition temperature:	Not applicable
(r) Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	no data available
(s) Explosive properties:	Not applicable
(t) Oxidising properties:	May intensify fire; oxidiser.

Other information

Bulk density:	no data available
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

SECTION 10: Stability and reactivity

Reactivity

Corrosive to metals

Oxidizer, allows chemicals to burn without an air supply.

Chemical stability

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

Possibility of hazardous reactions

Explosive reaction with:
Alcohols
Acetone
Reducing agent.
Violent reaction with:
Ammonia
Hydrogen iodide (HI)
Exothermic reaction with:
Water.
Substance, organic

Conditions to avoid

Humidity
Heat

Incompatible materials:

Metal.

Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Information on toxicological effects

Acute effects

Acute oral toxicity:
Nitric acid - LDLo: > 430 mg/kg - Human - (Sax)

Acute dermal toxicity:
no data available

Acute inhalation toxicity:
Nitric acid - LC50: > 2.65 mg/l (4 h) - Rat - (OECD 403)

Irritant and corrosive effects:

Primary irritation to the skin:
Causes severe skin burns and eye damage.

Irritation to eyes:
Causes serious eye damage.

Irritation to respiratory tract:
Not applicable

Respiratory or skin sensitization
In case of skin contact: not sensitizing
In case of inhalation: not sensitizing

STOT-single exposure
Not applicable

STOT-repeated exposure
Not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Carcinogenicity
No indication of human carcinogenicity.

IARC Monographs on the Identification of Carcinogenic Hazards to Humans:

Not listed

Germ cell mutagenicity
No indications of human germ cell mutagenicity exist.

Reproductive toxicity
No indications of human reproductive toxicity exist.

Aspiration hazard
Not applicable

Other adverse effects
no data available

SECTION 12: Ecological information

Ecotoxicity

Fish toxicity:
no data available

Daphnia toxicity:
no data available

Algae toxicity:
no data available

Bacteria toxicity:
no data available

Persistence and degradability
no data available

Bioaccumulative potential
Partition coefficient: n-octanol/water: no data available

Mobility in soil:
no data available

Other adverse effects
no data available

SECTION 13: Disposal considerations

Waste treatment methods

Appropriate disposal / Product
Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal. Product is an acid. Before disposal it needs to be neutralised.

Appropriate disposal / Package
Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (DOT)

UN-No.:	UN2031
Proper Shipping Name:	NITRIC ACID
Class(es):	8 (5.1)
Hazard label(s):	8+5.1
Packing group:	II
Environmental hazards**:**	No
Marine pollutant:	No
Special precautions for user**:**	

Sea transport (IMDG)

UN-No.:	2031
Proper Shipping Name:	NITRIC ACID
Class(es):	8 (5.1)
Hazard label(s):	8+5.1
Packing group:	II
Environmental hazards**:**	No
Marine pollutant:	No
Special precautions for user**:**	
Segregation group:	1
EmS-No.	F-A S-Q

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Air transport (ICAO-TI / IATA-DGR)

UN-No.:	2031
Proper Shipping Name:	NITRIC ACID
Class(es):	8 (5.1)
Classification code:	
Hazard label(s):	8+5.1
Packing group:	II
Special precautions for user:	

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Toxic Substances Control Act (TSCA)
- Nitric acid - CAS No.: 7697-37-2
- Water - CAS No.: 7732-18-5

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Does not contain listed substances.

SARA 313 Components

- Nitric acid - CAS No.: 7697-37-2

US State Regulations
Massachusetts Right To Know Components
- Nitric acid - CAS No.: 7697-37-2

Pennsylvania Right To Know Components

- Nitric acid - CAS No.: 7697-37-2

New Jersey Right To Know Components

- Nitric acid - CAS No.: 7697-37-2

California Prop. 65 Components

Does not contain listed substances.

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygiensts
DOT - Department of Transportation
IARC - International Agency for Research on Cancer
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PEL - Permissible Exposure Limit
STV - Short Term Value
SVHC - Substances of Very High Concern
TDG - Transport of Dangerous Goods
TLV - Threshold Limit Value
vPvB - very Persistent, very Bioaccumulative

Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

Revision date	Version	Print date
12.07.2024	3.5	2024-07-12

Additional information

Indication of changes:	general update If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com).

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