

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

1 Identification

- **Product identifier**
- **Trade name:** Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution
- **Article number:** 5650
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Aqua Solutions, Inc.
6913 Highway 225
DEER PARK, TX 77536
USA
800-256-2586
- **Information department:**
Technical Coordinator
Sherman Nelson shermann@aquasolutions.org
Technical Coordinator
Sherman Nelson shermann@aquasolutions.org
- **Emergency telephone number:**
Chemtec: 800-424-9300
Canutec: 613-996-6666



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Toxicity - Oral 3

H301 Toxic if swallowed.

Acute Toxicity - Dermal 3

H311 Toxic in contact with skin.

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08 Health hazard

Specific Target Organ Toxicity - Repeated Exposure 2 H373 May cause damage to organs through prolonged or repeated exposure.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS06



GHS08

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
Mercuric Nitrate
- **Hazard statements**
Toxic if swallowed, in contact with skin or if inhaled.
May cause damage to organs through prolonged or repeated exposure.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

**Trade name: Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution**

(Contd. of page 1)

- **Precautionary statements**

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves / protective clothing.

If swallowed: Immediately call a poison center/doctor.

Specific treatment (see on this label).

Rinse mouth.

If on skin: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a poison center/doctor.

Call a poison center/doctor if you feel unwell.

Get medical advice/attention if you feel unwell.

Take off immediately all contaminated clothing and wash it before reuse.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 0

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 7783-34-8	Mercuric Nitrate	0.293%
----------------	------------------	--------

- **Table of Nonhazardous Ingredients**

CAS: 7732-18-5	Water	99.662%
CAS: 7697-37-2	Nitric Acid	0.045%

US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

**Trade name: Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution**

(Contd. of page 2)

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Do not induce vomiting; immediately call for medical help.
- **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

CAS: 7783-34-8	Mercuric Nitrate	0.13 mg/m ³
CAS: 7697-37-2	Nitric Acid	0.16 ppm

- **PAC-2:**

CAS: 7783-34-8	Mercuric Nitrate	0.17 mg/m ³
----------------	------------------	------------------------

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

**Trade name: Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution**

(Contd. of page 3)

CAS: 7697-37-2	Nitric Acid	24 ppm
· PAC-3:		
CAS: 7783-34-8	Mercuric Nitrate	48 mg/m ³
CAS: 7697-37-2	Nitric Acid	92 ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**

· Components with limit values that require monitoring at the workplace:	
CAS: 7783-34-8 Mercuric Nitrate	
PEL	Long-term value: 0.1 mg/m ³ as Hg; see OSHA standard interpretation memo
REL	Long-term value: 0.05* mg/m ³ Ceiling limit value: 0.1 mg/m ³ as Hg; *Vapor; Skin
TLV	Long-term value: 0.025 mg/m ³ as Hg; A4; Skin; BEI

- **Ingredients with biological limit values:**

CAS: 7783-34-8 Mercuric Nitrate	
BEI	20 µg/g creatinine LD50 Intraperitoneal: urine Time: prior to shift LD50: Mercury

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

**Trade name: Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution**

(Contd. of page 4)

Store protective clothing separately.
Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Liquid
Color:	Clear
Odor:	Odorless
Odor threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range:	0 °C (32 °F)
Boiling point/Boiling range:	100 °C (212 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Decomposition temperature:** Not determined.

· **Ignition temperature:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

(Contd. on page 6)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

**Trade name: Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution**

(Contd. of page 5)

· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)
· Density at 20 °C (68 °F):	1.00242 g/cm ³ (8.36519 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Water:	99.7 %
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
Solids content:	0.3 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	1,705 mg/kg
Dermal	LD50	1,705 mg/kg
Inhalative	LC50/4h	17 mg/l

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

Trade name: Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution

(Contd. of page 6)

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
 Toxic

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

CAS: 7783-34-8	Mercuric Nitrate	3
----------------	------------------	---

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

* 14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

UN3287

- **UN proper shipping name**

- **DOT**

- **IMDG, IATA**

Toxic liquid, inorganic, n.o.s. (Mercuric Nitrate)

TOXIC LIQUID, INORGANIC, N.O.S. (Mercuric Nitrate)

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

**Trade name: Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution**

(Contd. of page 7)

· **Transport hazard class(es)**

· **DOT**



· **Class** 6.1 Toxic substances
· **Label** 6.1

· **IMDG, IATA**



· **Class** 6.1 Toxic substances
· **Label** 6.1

· **Packing group**
· **DOT, IMDG, IATA** III

· **Environmental hazards:**
· **Marine pollutant:** No

· **Special precautions for user** Warning: Toxic substances
· **Hazard identification number (Kemler code):** 6.1
· **Stowage Category** A
· **Stowage Code** SW2 Clear of living quarters.

· **Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **DOT**
· **Quantity limitations** On passenger aircraft/rail: 60 L
On cargo aircraft only: 220 L

· **IMDG**

· **Limited quantities (LQ)** 5L
· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":** UN 3287 TOXIC LIQUID, INORGANIC, N.O.S. (MERCURIC NITRATE), 6.1, III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
· **Sara**

· **Section 355 (extremely hazardous substances):**

CAS: 7697-37-2 Nitric Acid

(Contd. on page 9)

Safety Data Sheet



acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

**Trade name: Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution**

(Contd. of page 8)

· Section 313 (Specific toxic chemical listings):	
CAS: 7783-34-8	Mercuric Nitrate
CAS: 7697-37-2	Nitric Acid
· TSCA (Toxic Substances Control Act):	
Water	ACTIVE
Nitric Acid	ACTIVE
· Hazardous Air Pollutants	
CAS: 7783-34-8	Mercuric Nitrate
· Proposition 65	
· Chemicals known to cause cancer:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
· Chemicals known to cause developmental toxicity:	
CAS: 7783-34-8	Mercuric Nitrate
· Carcinogenic categories	
· EPA (Environmental Protection Agency)	
CAS: 7783-34-8	Mercuric Nitrate
	D
· TLV (Threshold Limit Value)	
CAS: 7783-34-8	Mercuric Nitrate
	A4
· NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	
· GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).	
· Hazard pictograms	
	
GHS06	GHS08
· Signal word Danger	
· Hazard-determining components of labeling:	
Mercuric Nitrate	
· Hazard statements	
Toxic if swallowed, in contact with skin or if inhaled.	
May cause damage to organs through prolonged or repeated exposure.	
· Precautionary statements	
Do not breathe dust/fume/gas/mist/vapors/spray.	
Wash thoroughly after handling.	
Do not eat, drink or smoke when using this product.	
Use only outdoors or in a well-ventilated area.	
Wear protective gloves / protective clothing.	
If swallowed: Immediately call a poison center/doctor.	
Specific treatment (see on this label).	

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/18/2024

Reviewed on 06/18/2024

**Trade name: Mercuric Nitrate 0.0171 Normal
NIST Traceable Solution**

(Contd. of page 9)

Rinse mouth.

If on skin: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a poison center/doctor.

Call a poison center/doctor if you feel unwell.

Get medical advice/attention if you feel unwell.

Take off immediately all contaminated clothing and wash it before reuse.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environment protection department.

· **Contact:**

Date of Preparation / Last Revision:

· **Date of preparation / last revision**

Revision 0.1, 06/18/2024: Reviewed SDS for accuracy. MH/STN
06/18/2024 / 1.0

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Acute Toxicity - Oral 3: Acute toxicity – Category 3

Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) – Category 2

· *** Data compared to the previous version altered.**