

Safety Data Sheet

acc. to OSHA HCS

Printing date 09/06/2017

Reviewed on 06/13/2014

1 Identification

- **Product identifier**
- **Trade name:** Mercuric Nitrate 0.0141 Normal
NIST Traceable Solution
- **Article number:** 5630
- **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 sherman@aquasolutions.org
- **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

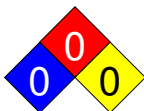
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

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



GHS08

- **Signal word** Warning
- **Hazard-determining components of labeling:**
Mercuric Nitrate
- **Hazard statements**
May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
Do not breathe dust/fume/gas/mist/vapors/spray.
Get medical advice/attention if you feel unwell.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	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	0.242%
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· **Table of Nonhazardous Ingredients**

CAS: 7697-37-2	Nitric Acid	0.038%
CAS: 7732-18-5	Water	99.721%

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **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** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.

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- **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 item 13.
- **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
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** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** None.
- **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 item 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; Skin; BEI

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· Ingredients with biological limit values:

CAS: 7783-34-8 Mercuric Nitrate

BEI	35 µg/L LD50 Intraperitoneal: urine Time: prior to shift LD50: Total inorganic mercury (background)
	15 µg/L LD50 Intraperitoneal: blood Time: end of shift at end of workweek LD50: Total inorganic mercury (background)

· 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.
Wash hands before breaks and at the end of work.
Store protective clothing separately.

· 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

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9 Physical and chemical properties

<i>· Information on basic physical and chemical properties</i>	
<i>· General Information</i>	
<i>· Appearance:</i>	
<i>Form:</i>	Liquid
<i>Color:</i>	Clear
<i>Odor:</i>	Odorless
<i>Odor threshold:</i>	Not determined.
<i>pH-value:</i>	Not determined.
<i>· Change in condition</i>	
<i>Melting point/Melting range:</i>	Undetermined.
<i>Boiling point/Boiling range:</i>	100 °C (212 °F)
<i>Flash point:</i>	Not applicable.
<i>Flammability (solid, gaseous):</i>	Not applicable.
<i>· Ignition temperature:</i>	
<i>Decomposition temperature:</i>	Not determined.
<i>Auto igniting:</i>	Product is not selfigniting.
<i>Danger of explosion:</i>	Product does not present an explosion hazard.
<i>· Explosion limits:</i>	
<i>Lower:</i>	Not determined.
<i>Upper:</i>	Not determined.
<i>Vapor pressure at 20 °C (68 °F):</i>	23 hPa (17 mm Hg)
<i>Density at 20 °C (68 °F):</i>	1.00014 g/cm ³ (8.346 lbs/gal)
<i>Relative density</i>	Not determined.
<i>Vapor density</i>	Not determined.
<i>Evaporation rate</i>	Not determined.
<i>· Solubility in / Miscibility with</i>	
<i>Water:</i>	Fully miscible.
<i>· Partition coefficient (n-octanol/water):</i> Not determined.	
<i>· Viscosity:</i>	
<i>Dynamic:</i>	Not determined.
<i>Kinematic:</i>	Not determined.
<i>· Solvent content:</i>	
<i>Organic solvents:</i>	0.0 %
<i>Water:</i>	99.7 %
<i>VOC content:</i>	0.0 g/l / 0.00 lb/gl
<i>Solids content:</i>	0.2 %
<i>· Other information</i> No further relevant information available.	

10 Stability and reactivity

· Reactivity No further relevant information available.

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- **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	10766 mg/kg (rat)
Dermal	LD50	31056 mg/kg (rat)
Inhalative	LC50/4 h	207 mg/l

CAS: 7783-34-8 Mercuric Nitrate

Oral	LD50	26 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat)
Inhalative	LC50/4 h	0.5 mg/l (ATE)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:

- **Carcinogenic categories**

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

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

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- *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

- | | |
|---|---|
| <ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA | <p style="margin-left: 20px;">UN3287</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG, IATA | <p style="margin-left: 20px;"><i>Toxic liquid, inorganic, n.o.s. (Mercuric nitrate)</i>
TOXIC LIQUID, INORGANIC, N.O.S. (MERCURIC NITRATE)</p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> · Class · Label | <p style="margin-left: 20px;">6.1 Toxic substances
6.1</p> |
| <ul style="list-style-type: none"> · IMDG, IATA | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> · Class · Label | <p style="margin-left: 20px;">Not regulated
6.1</p> |
| <ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA | <p style="margin-left: 20px;">III</p> |
| <ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: | <p style="margin-left: 20px;">No</p> |
| <ul style="list-style-type: none"> · Special precautions for user · Stowage Category · Stowage Code | <p style="margin-left: 20px;">Warning: Toxic substances
A
SW2 Clear of living quarters.</p> |

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- | | |
|--|--|
| · 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 |
| <hr style="border-top: 1px dashed black;"/> | |
| · 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
- Sara

· Section 355 (extremely hazardous substances):
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CAS: 7697-37-2	Nitric Acid
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· Section 313 (Specific toxic chemical listings):
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CAS: 7783-34-8	Mercuric Nitrate
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CAS: 7697-37-2	Nitric Acid
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· TSCA (Toxic Substances Control Act):

CAS: 7697-37-2	Nitric Acid
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CAS: 7732-18-5	Water
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· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:
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None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
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None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

CAS: 7783-34-8	Mercuric Nitrate
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· Carcinogenic categories

· EPA (Environmental Protection Agency)
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CAS: 7783-34-8	Mercuric Nitrate	D
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· TLV (Threshold Limit Value established by ACGIH)

CAS: 7783-34-8	Mercuric Nitrate	A4
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· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

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



GHS08

- **Signal word** Warning
- **Hazard-determining components of labeling:**
Mercuric Nitrate
- **Hazard statements**
May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
Do not breathe dust/fume/gas/mist/vapors/spray.
Get medical advice/attention if you feel unwell.
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**
09-06-2017: review SDS for accuracy. STN
Creation date for SDS 06-13-2014. STN
09/06/2017 / -
- **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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