

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

## 1 Identification

- **Product identifier**
- **Trade name:** Lead Nitrate 0.05 Molar Solution. (0.2 uM Filtered)
- **Article number:** DC542-275
- **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

- Carc. 2 H351 Suspected of causing cancer.
- Repr. 1 H360 May damage fertility or the unborn child.
- 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** Danger
- **Hazard-determining components of labeling:**  
Lead Nitrate
- **Hazard statements**  
Suspected of causing cancer.  
May damage fertility or the unborn child.  
May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**  
Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Wear protective gloves/protective clothing/eye protection/face protection.  
IF exposed or concerned: Get medical advice/attention.  
Get medical advice/attention if you feel unwell.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

**Trade name: Lead Nitrate 0.05 Molar  
Solution. (0.2 µM Filtered)**

(Contd. of page 1)

Store locked up.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 3

Reactivity = 0

The substance possesses oxidizing properties.

· **HMIS-ratings (scale 0 - 4)**

HEALTH	2
FIRE	3
REACTIVITY	0

Health = 2

Fire = 3

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: 10099-74-8	Lead Nitrate	1.635%
-----------------	--------------	--------

· **Table of Nonhazardous Ingredients**

CAS: 7697-37-2	Nitric Acid	0.0742%
CAS: 7732-18-5	Water	98.291%

### 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.

US  
(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

**Trade name:** *Lead Nitrate 0.05 Molar  
Solution. (0.2 uM Filtered)*

(Contd. of page 2)

## 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.*
- **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: 10099-74-8	Lead Nitrate	0.24 mg/m <sup>3</sup>
CAS: 7697-37-2	Nitric Acid	0.16 ppm

- **PAC-2:**

CAS: 10099-74-8	Lead Nitrate	180 mg/m <sup>3</sup>
CAS: 7697-37-2	Nitric Acid	24 ppm

- **PAC-3:**

CAS: 10099-74-8	Lead Nitrate	1,100 mg/m <sup>3</sup>
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.*

US

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

**Trade name: Lead Nitrate 0.05 Molar  
Solution. (0.2 µM Filtered)**

(Contd. of page 3)

## 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: 10099-74-8 Lead Nitrate**

PEL	Long-term value: 0.05 mg/m <sup>3</sup> as Pb; See 29 CFR 1910.1025
REL	Long-term value: 0.05* mg/m <sup>3</sup> as Pb; *8-hr TWA; See Pocket Guide App. C
TLV	Long-term value: 0.05 mg/m <sup>3</sup> as Pb; BEI

· **Ingredients with biological limit values:**

**CAS: 10099-74-8 Lead Nitrate**

BEI	30 µg/100 ml LD50 Intraperitoneal: blood Time: not critical LD50: Lead
-----	---

· **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.

(Contd. on page 5)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

**Trade name:** *Lead Nitrate 0.05 Molar  
Solution. (0.2 µM Filtered)*

(Contd. of page 4)

· **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:**

<b>Form:</b>	Liquid
<b>Color:</b>	Clear
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.

· **pH-value:** *Not determined.*· **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	100 °C (212 °F)

· **Flash point:** *Not applicable.*· **Flammability (solid, gaseous):** *Not applicable.*· **Ignition temperature:****Decomposition temperature:** *Not determined.*· **Auto igniting:** *Product is not selfigniting.*· **Danger of explosion:** *Product does not present an explosion hazard.*· **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

· **Vapor pressure at 20 °C (68 °F):** *23 hPa (17.3 mm Hg)*· **Density at 20 °C (68 °F):** *1.05816 g/cm<sup>3</sup> (8.83035 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:**

<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.

· **Solvent content:****Water:** *98.3 %*

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

**Trade name: Lead Nitrate 0.05 Molar  
Solution. (0.2 µM Filtered)**

(Contd. of page 5)

**VOC content:** 0.00 %  
0.0 g/l / 0.00 lb/gl

**Solids content:** 1.6 %  
· **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	30,587 mg/kg
Inhalative	LC50/4 h	673 mg/l

### CAS: 10099-74-8 Lead Nitrate

Oral	LD50	500 mg/kg (ATE)
Inhalative	LC50/4 h	11 mg/l (ATE)
	Intraperitoneal	73 mg/kg (mouse)

- **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: 10099-74-8	Lead Nitrate	2A
-----------------	--------------	----

- **NTP (National Toxicology Program)**

CAS: 10099-74-8	Lead Nitrate	R
-----------------	--------------	---

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

None of the ingredients is listed.

US

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

**Trade name:** *Lead Nitrate 0.05 Molar  
Solution. (0.2 uM Filtered)*

(Contd. of page 6)

## 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

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>                                | <p style="margin: 0;"><i>UN1469</i></p>  |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>IMDG, IATA</b></li> </ul> | <p style="margin: 0;"><i>Lead nitrate solution<br/>LEAD NITRATE solution</i></p> |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>                           | <p style="margin: 0;"><i>5.1 Oxidizing substances<br/>5.1, 6.1</i></p>           |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>  | <p style="margin: 0;"><i>5.1 Oxidizing substances<br/>5.1, 6.1</i></p>           |



(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

**Trade name:** *Lead Nitrate 0.05 Molar  
Solution. (0.2 µM Filtered)*

(Contd. of page 7)

· **IMDG**

· **Class** 5.1 Oxidizing substances  
· **Label** 5.1/6.1

· **IATA**

· **Class** 5.1 Oxidizing substances  
· **Label** 5.1 (6.1)

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

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

· **Special precautions for user** Warning: Oxidizing substances  
· **Danger code (Kemler):** 56  
· **EMS Number:** F-A,S-Q  
· **Segregation groups** Heavy metals and their salts (including their organometallic compounds), lead and its compounds  
· **Stowage Category** A

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

· **UN "Model Regulation":** UN 1469 LEAD NITRATE SOLUTION, 5.1 (6.1), II

## 15 Regulatory information

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

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

CAS: 7697-37-2	Nitric Acid
----------------	-------------

· **Section 313 (Specific toxic chemical listings):**

CAS: 10099-74-8	Lead Nitrate
-----------------	--------------

CAS: 7697-37-2	Nitric Acid
----------------	-------------

· **TSCA (Toxic Substances Control Act):**

Lead Nitrate
--------------

Nitric Acid
-------------

Water
-------

(Contd. on page 9)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

**Trade name: Lead Nitrate 0.05 Molar  
Solution. (0.2 µM Filtered)**

(Contd. of page 8)

· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 10099-74-8 | Lead Nitrate

· **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:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

CAS: 10099-74-8 | Lead Nitrate

B2

· **TLV (Threshold Limit Value established by ACGIH)**

CAS: 10099-74-8 | Lead Nitrate

A3

· **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**



GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

Lead Nitrate

· **Hazard statements**

Suspected of causing cancer.

May damage fertility or the unborn child.

May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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

Wear protective gloves/protective clothing/eye protection/face protection.

IF exposed or concerned: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

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.

(Contd. on page 10)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 10/27/2017

Reviewed on 10/27/2017

**Trade name: Lead Nitrate 0.05 Molar  
Solution. (0.2 µM Filtered)**

(Contd. of page 9)

· **Contact:**

· **Date of preparation / last revision**

10-27-2017: review SDS for accuracy. STN

Creation date for SDS 03-16-2015. STN

10/27/2017 / -

· **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

Carc. 2: Carcinogenicity – Category 2

Repr. 1: Reproductive toxicity – Category 1

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

US