Soil Sample Treated with Lead Nitrate

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

Date of Issue: 09/19/2022 Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Soil Sample Treated with Lead Nitrate

Product Code: SS1001SS

1.2. Intended Use of the Product

Laboratory

1.3. Name, Address, and Telephone of the Responsible Party

Company

AquaPhoenix Scientific, Inc.
860 Gitts Run Road
Hanover, PA 17331 USA
Tel +1 (717)632-1291
Toll-Free: (866)632-1291
tech@aquaphoenixsci.com

1.4. Emergency Telephone Number

Emergency Number : VelocityEHS
(800)255-3924 (North America)
+1 (813)248-0585 (International)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US/CA Classification

Oxidizing solids Category 2	H272
Acute toxicity (oral) Category 4	H302
Serious eye damage/eye irritation Category 1	H318
Skin sensitization, Category 1	H317
Carcinogenicity Category 1B	H350
Reproductive toxicity Category 1A	H360
Specific target organ toxicity (repeated exposure) Category 1	H372
Hazardous to the aquatic environment - Acute Hazard Category 1	H400
Hazardous to the aquatic environment - Chronic Hazard Category 1	H410

2.2. Label Elements

GHS-US/CA Labeling

Hazard Pictograms (GHS-US/CA) :

Signal Word (GHS-US/CA) : Danger

Hazard Statements (GHS-US/CA) : H272 - May intensify fire; oxidizer.
H302 - Harmful if swallowed.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H350 - May cause cancer.
H360 - May damage fertility or the unborn child.
H372 - Causes damage to organs (central nervous system, hematopoietic system, kidneys) through prolonged or repeated exposure.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary Statements (GHS-US/CA) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 - Keep away from clothing and other combustible materials.
P260 - Do not breathe dust.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P302+P352 - IF ON SKIN: Wash with plenty of water.
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 or doctor.
P321 - Specific treatment (see section 4 on this SDS).
P330 - Rinse mouth.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Top Soil	-	NA	73	Not classified
Lead nitrate	Lead dinitrate / Lead(2+) nitrate / Lead(II) nitrate / Nitric acid, lead(2+) salt / Nitric acid, lead(2+) salt (2:1)	(CAS-No.) 10099-74-8	27	Ox. Sol. 2, H272 Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Inhalation), H332 Eye Dam. 1, H318 Skin Sens. 1B, H317 Carc. 1B, H350 Repr. 1A, H360 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-statements: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Immediately remove contaminated clothing. Wash affected area with soap and water for at least 15 minutes. Get medical advice/attention.

Eye Contact: Immediately rinse with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Causes serious eye damage. Harmful if swallowed. Causes damage to organs (central nervous system, hematopoietic system, kidneys) through prolonged or repeated exposure. May cause cancer. May damage fertility. May damage the unborn child. Skin sensitization. Lead: Exposure can result in lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; encephalopathy; kidney disease; hypertension.

Inhalation: Prolonged exposure may cause irritation.

Skin Contact: May cause an allergic skin reaction.

Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: This material is harmful orally and can cause adverse health effects or death in significant amounts. Ingestion may cause methemoglobinemia. Initial manifestation of methemoglobinemia is cyanosis, characterized by navy lips, tongue and mucous membranes, with skin color being slate grey. Further manifestation is characterized by headache, weakness, dyspnea, dizziness, stupor, respiratory distress and death due to anoxia. If ingested, nitrates may be reduced to nitrites by bacteria in the digestive tract. Signs and symptoms of nitrite poisoning include methemoglobinemia, nausea, dizziness, increased heart rate, hypotension, fainting and, possibly shock.

Chronic Symptoms: May cause cancer. Causes damage to organs (central nervous system, hematopoietic system, kidneys) through prolonged or repeated exposure. May damage fertility. May damage the unborn child. Lead can bioaccumulate over time, specifically in the skeleton, leading to potential toxicity. Lead body burdens vary significantly with age, health status, nutritional state, and many other factors. For more information on lead exposure see 29CFR 1910.1025.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Water spray, fog, carbon dioxide (CO_2), alcohol-resistant foam, or dry chemical.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: May cause fire or explosion; strong oxidizer.

Explosion Hazard: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity: Oxidizer: increases the burning rate of combustible materials.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO_2). Nitrogen oxides. Lead compound.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe dust. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Keep away from combustible material.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Collect spillage.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. Use only non-sparking tools.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Recover the product by vacuuming, shoveling or sweeping. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: May cause or intensify fire; oxidizer.

Precautions for Safe Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Keep away from heat, sparks, open flames, hot surfaces, combustible materials, incompatible materials. - No smoking. Handle empty containers with care because they may still present a hazard. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store locked up/in a secure area. Keep in fireproof place.

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Combustible materials. Reducing agents. Metallic powders. Ammonium Compounds. Acetates. Alcohols.

7.3. Specific End Use(s)

Laboratory

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

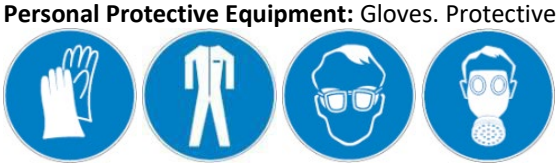
Lead inorganic compounds		
USA ACGIH	ACGIH OEL TWA	0.05 mg/m³
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
USA ACGIH	BEI (BLV)	200 µg/l Parameter: Lead - Medium: blood - Sampling time: not critical (Note: Persons applying this BEI are encouraged to counsel female workers of child-bearing age about the risk of delivering a child with a PbB (lead in blood level) over the current CDC reference value.)
USA OSHA	OSHA PEL (TWA) [1]	50 µg/m³
USA OSHA	OSHA Action Level/Excursion Limit	30 µg/m³ (Action Level, See 29 CFR 1910.1025, as Pb)
Alberta	OEL TWA	0.05 mg/m³
British Columbia	OEL TWA	0.05 mg/m³
Manitoba	OEL TWA	0.05 mg/m³
New Brunswick	OEL TWA	0.05 mg/m³
Newfoundland & Labrador	OEL TWA	0.05 mg/m³
Nova Scotia	OEL TWA	0.05 mg/m³
Nunavut	OEL STEL	0.15 mg/m³

Nunavut	OEL TWA	0.05 mg/m³
Northwest Territories	OEL STEL	0.15 mg/m³
Northwest Territories	OEL TWA	0.05 mg/m³
Ontario	OEL TWA	0.05 mg/m³ (designated substances regulation, except Tetraethyllead (Lead, elemental Lead, inorganic and organic compounds of Lead) 0.05 mg/m³ (applies to workplaces to which the designated substances regulation does not apply)
Prince Edward Island	OEL TWA	0.05 mg/m³
Québec	VEMP (OEL TWA)	0.05 mg/m³
Saskatchewan	OEL STEL	0.15 mg/m³
Saskatchewan	OEL TWA	0.05 mg/m³
Yukon	OEL STEL	0.45 mg/m³ (dust and fume)
Yukon	OEL TWA	0.15 mg/m³ (dust and fume)

8.2. Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Proper grounding procedures to avoid static electricity should be followed. Gas detectors should be used when flammable gases or vapors may be released. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing: Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Hand Protection: Wear protective gloves.

Eye and Face Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	:	Solid
Appearance	:	Brown, crumbly
Odor	:	None
Odor Threshold	:	No data available
pH	:	No data available
Evaporation Rate	:	No data available
Melting Point	:	No data available
Freezing Point	:	No data available
Boiling Point	:	No data available
Flash Point	:	No data available
Auto-ignition Temperature	:	No data available
Decomposition Temperature	:	No data available
Flammability	:	No data available
Lower Flammable Limit	:	No data available
Upper Flammable Limit	:	No data available
Vapor Pressure	:	No data available
Relative Vapor Density at 20°C	:	No data available
Relative Density	:	No data available
Specific Gravity	:	No data available

Solubility	:	Water: Partially Soluble
Partition Coefficient: N-Octanol/Water	:	No data available
Viscosity	:	No data available
Oxidizing Properties	:	May intensify fire; oxidizer.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Oxidizer: increases the burning rate of combustible materials.

10.2. Chemical Stability:

May cause fire or explosion; strong oxidizer.

10.3. Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

10.4. Conditions to Avoid:

Direct sunlight, extremely high or low temperatures, ignition sources, combustible materials, incompatible materials.

10.5. Incompatible Materials:

Strong acids, strong bases, strong oxidizers. Combustible materials. Reducing agents. Metallic powders. Ammonium Compounds. Acetates. Alcohols.

10.6. Hazardous Decomposition Products:

Thermal decomposition may produce: Carbon oxides (CO, CO_2). Nitrogen oxides. Lead compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity (Oral): Harmful if swallowed.

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data:

Soil Sample Treated with Lead Nitrate	
ATE US/CA (oral)	344.44 mg/kg body weight

Skin Corrosion/Irritation: Not classified

Eye Damage/Irritation: Causes serious eye damage.

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer.

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (central nervous system, hematopoietic system, kidneys) through prolonged or repeated exposure.

Reproductive Toxicity: May damage fertility. May damage the unborn child.

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.

Symptoms/Injuries After Skin Contact: May cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Injuries After Ingestion: This material is harmful orally and can cause adverse health effects or death in significant amounts. Ingestion may cause methemoglobinemia. Initial manifestation of methemoglobinemia is cyanosis, characterized by navy lips, tongue and mucous membranes, with skin color being slate grey. Further manifestation is characterized by headache, weakness, dyspnea, dizziness, stupor, respiratory distress and death due to anoxia. If ingested, nitrates may be reduced to nitrites by bacteria in the digestive tract. Signs and symptoms of nitrite poisoning include methemoglobinemia, nausea, dizziness, increased heart rate, hypotension, fainting and, possibly shock.

Chronic Symptoms: May cause cancer. Causes damage to organs (central nervous system, hematopoietic system, kidneys) through prolonged or repeated exposure. May damage fertility. May damage the unborn child. Lead can bioaccumulate over time, specifically in the skeleton, leading to potential toxicity. Lead body burdens vary significantly with age, health status, nutritional state, and many other factors. For more information on lead exposure see 29CFR 1910.1025.

Potential Adverse human health effects and symptoms: Based on available data, the classification criteria are not met. Harmful if swallowed.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Lead nitrate (10099-74-8)	
LD50 Oral Rat	93 mg/kg
ATE US/CA (dust, mist)	1.50 mg/l/4h

Lead nitrate (10099-74-8)	
IARC Group	2A
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Very toxic to aquatic life with long lasting effects.

Lead nitrate (10099-74-8)	
EC50 - Crustacea [1]	0.124 mg/l

12.2. Persistence and Degradability

Soil Sample Treated with Lead Nitrate	
Persistence and Degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative Potential

Soil Sample Treated with Lead Nitrate	
Bioaccumulative Potential	Not established.

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name : NITRATES, INORGANIC, N.O.S. (Contains: Lead Nitrate)
Hazard Class : 5.1
Identification Number : UN1477
Label Codes : 5.1

Packing Group : II
Marine Pollutant : Marine pollutant
ERG Number : 140

14.2. In Accordance with IMDG

Proper Shipping Name : NITRATES, INORGANIC, N.O.S. (Contains: Lead Nitrate)
Hazard Class : 5.1
Identification Number : UN1477
Label Codes : 5.1

Packing Group : II
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-Q
Marine pollutant : Marine pollutant

14.3. In Accordance with IATA

Proper Shipping Name : NITRATES, INORGANIC, N.O.S. (Contains: Lead Nitrate)

Hazard Class : 5.1

Identification Number : UN1477

Label Codes : 5.1

Packing Group : II

ERG Code (IATA) : 5L

14.4. In Accordance with TDG

Proper Shipping Name : NITRATES, INORGANIC, N.O.S. (Contains: Lead Nitrate)

Hazard Class : 5.1

Identification Number : UN1477

Label Codes : 5.1

Packing Group : II

Marine Pollutant (TDG) : Marine pollutant

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Soil Sample Treated with Lead Nitrate	
SARA Section 311/312 Hazard Classes	Health hazard - Carcinogenicity Health hazard - Specific target organ toxicity (single or repeated exposure) Health hazard - Respiratory or skin sensitization Physical hazard - Oxidizer (liquid, solid or gas) Health hazard - Reproductive toxicity Health hazard - Acute toxicity (any route of exposure) Health hazard - Serious eye damage or eye irritation

Lead nitrate (10099-74-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
CERCLA RQ	10 lb

Lead inorganic compounds	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	0.1 % (includes any unique chemical substance that contains Lead as part of that chemical's infrastructure)

15.2. US State Regulations

Soil Sample Treated with Lead Nitrate
State or local regulations

Lead nitrate (10099-74-8)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

15.3. Canadian Regulations

Lead nitrate (10099-74-8)
Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 09/19/2022

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

H272	May intensify fire; oxidizer

H301	Toxic if swallowed
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H332	Harmful if inhaled
H350	May cause cancer
H360	May damage fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

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.

NA GHS SDS 2015 (Can, US)