Safety Data Sheets

Desolation STEM kit
Urine TroubleTM – Water Purification

This document contains SDS for the following kit items:

Lead Nitrate, 0.1M
Synthetic Urine

Last Updated: June 11, 2015
Section 1 - Chemical Product and Company Identification

Name: Lead Nitrate, 0.1M
Common Synonyms: Lead Nitrate Solution

Chemtrec Phone: 800-424-9300
National Response Center (emergency use): 800-424-8802

Product Use: Laboratory Reagent

Section 2 - Hazard Identification

CARCINOGENICITY Category I
DANGER: May cause cancer
Hazard Symbol: Carcinogen

Emergency Overview
Effects of overexposure:
Inhalation: Breathing lead nitrate can irritate the nose and throat. Irritation of the bronchi and lungs may also occur. It may be absorbed through the respiratory system. It may cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of blood), convulsions, tachycardia, chest pain due to dyspnea (labored breathing), and death. It may also affect behavior/central nervous system effects including headache, convulsions, and possible death. It may cause kidney damage and anemia. It may also cause other symptoms similar to that of ingestion.

Ingestion: Acute lead poisoning or plumblism is rare. Acute lead poisoning by ingestion may result in lead colic, abdominal discomfort or cramps, lead line on the gums, anorexia (loss of appetite)/weight loss, constipation, metallic taste. It may also affect behavior/central nervous system and cause headache, lassitude, insomnia, muscle weakness, depression, irritability, lassitude, dizziness, reduced memory, and disturbed sleep.

Skin Contact: Causes skin irritation. May be absorbed through the skin.

Eye Contact: Causes eye irritation.

Chronic Exposure: Chronic exposure to inorganic lead via ingestion can result in accumulation in and damage to the soft tissues and bones.

Aggravation of Pre-existing Conditions: Not available

Section 3 - Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Nitrate</td>
<td>10099-74-8</td>
<td>3.31%</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>96.69%</td>
</tr>
</tbody>
</table>

Section 4 - First Aid Measures

Inhalation: No information available

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin Contact: In case of contact, immediately rinse affected area with water for at least 15 minutes. Cold water may be used. Get medical attention.

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Section 5 - Fire-Fighting Measures

Fire: Non-flammable. If subjected to heating in a fire, the lead nitrate may crystallize from the solution as water evaporates. This material could act as an oxidizing agent.

Explosion: Not available
Fire Extinguishing Media: Use media appropriate to surrounding fire.
Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

Section 6 - Accidental Release Measures
Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7 - Handling and Storage
Handling Procedures and Equipment: Do not ingest. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage requirements: Keep container tightly closed. Keep container in a cool, well-ventilated area. Store with amides, nitrates, and nitriles. Keep in a well closed container stored under cool conditions. Protect against physical damage.

Section 8 - Exposure Controls / Personal Protection
TWA: 0.05 (mg/Pb)/m from OSHA (PEL) [United States]
TWA: 0.05 (mg/Pb)/m from ACGIH (TLV) [United States]
TWA: 0.1 (mg/Pb)/m from NIOSH.
Consult local authorities for acceptable exposure limits.

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved): For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g., lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Section 9 - Physical and Chemical Properties
Appearance: Colorless liquid
Odor: No odor
Odor Threshold: N/A
pH: Not available
Melting Point: 470°C (878°F) - decomposes
Boiling Point: Not available.
Flash Point: No information found.
Evaporation Rate (BuAc = 1): No information found.
Flammability: Flammable
Flammability/explosive limits: No information found.
Vapor Pressure (mm Hg): No information found.
Vapor Density (Air=1): No information found.
Relative Density: 7.14
Solubility: Easily soluble in water, soluble in methanol, nitric acid
Partition Coefficient: No information found.
Auto-ignition Temperature: No information found.
Decomposition Temperature: No information found.
**Section 10 - Stability and Reactivity**

**Reactivity:** Reacts in contact with Incompatible Materials

**Stability:** Stable under ordinary conditions of use and storage.

**Hazardous Reactions:** No information listed

**Conditions to Avoid:** Incompatible materials, excess heat, moisture.

**Incompatible Materials:** Combustible materials, organic materials, strong reducing agents, Ammonium thiocyanate, powdered carbon, lead hypophosphite, potassium acetate, aluminum, alkyl esters, hydroxylamine, phosphorus, phosphinates, sulfur, tin chloride.

**Hazardous Decomposition Products Not Available**

**Hazardous Polymerization:** Will not occur.

**Section 11 - Toxicological Information**

**Toxicological Data:**

No data found.

**Chronic Effects on Humans:**

- **CARCINOGENIC EFFECTS:** Classified A3 (Proven for animal) by ACGIH, 2B (Possible for human) by IARC.
- **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells.
- **DEVELOPMENTAL TOXICITY:** Classified Reproductive system/toxic/female, Reproductive system/toxic/male [SUSPECTED]. May cause damage to the following organs: blood, kidney, the reproductive system, peripheral nervous system, central nervous system (CNS).

**Other Toxic Effects on Humans:**

Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of skin contact (penetrator).

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:**

Human: passes through the placenta. May cause adverse reproductive effects and birth defects (teratogenic). May affect genetic material (mutagenic). It may cause cancer, but no conclusive evidence exists for humans. The American Conference of Governmental Industrial Hygienists (ACGIH) classified it as a confirmed animal carcinogen with unknown relevance to humans.

**Section 12 - Ecological Information**

**Ecotoxicity:** Ecotoxicity in water (LC50): 240 ppm 48 hours [Fish (Mosquito fish)]. 6.7 ppm 96 hours [Daphnia (daphnia)]. Products of biodegradation are less toxic than the product.

**Section 13 - Disposal Considerations**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

**Section 14 - Transport Information**

- **IATA:** Not regulated
- **DOT:** Not regulated

**Section 15 - Regulatory Information**

**Federal and State Regulations:**

- **California prop. 65:** This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Lead nitrate (Listed as Lead and Lead compounds) California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (female) which would require a warning under the statute: Lead nitrate (Listed as Lead and Lead compounds) California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: Lead nitrate (Listed as Lead and Lead compounds) California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Lead nitrate (Listed as Lead and Lead...
compounds) California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Lead nitrate (Listed as Lead and Lead compounds)

Other Classifications:

HMIS (U.S.A.):
Health Hazard: 2
Fire Hazard: 0
Reactivity: 1
Personal Protection: B

National Fire Protection Association (U.S.A.):
Health: 2
Flammability: 0
Reactivity: 1
Specific hazard:
Protective Equipment: Gloves, Splash goggles.

<table>
<thead>
<tr>
<th>Section 16 - Other Information</th>
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</thead>
</table>

Updated June 11, 2015

WHMIS: SDS prepared according to hazard criteria of controlled products regulations (CPR) and SDS contains all information required by CPR and GHS.

The above information has been developed based upon currently available scientific data. New information may be developed from time to time which may render the conclusions of this report obsolete. Therefore, no warranty is extended as to the applicability of this information to the user’s intended purpose or for the consequences of its use or misuse. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Crosscutting Concepts, LLC shall not be held liable for any damage resulting from handling or from contact with the above product.
### Section 1 - Chemical Product and Company Identification

**Name:** Synthetic Urine  
**Common Synonyms:** None

Chemetrc Phone: 800-424-9300  
National Response Center (emergency use): 800-424-8802

**Product Use:** Laboratory Reagent

### Section 2 - Hazard Identification

**SKIN CORROSION/IRRITANT Category 3**  
**WARNING:** May cause skin burns and eye damage  
**Symbol:** None

**Emergency Overview**

**Effects of overexposure:**
- **Inhalation:** May cause irritation.  
- **Ingestion:** Hazardous in case of ingestion  
- **Skin Contact:** May cause skin irritation.  
- **Eye Contact:** May cause eye irritation.  
- **Chronic Exposure:** No information found.  
- **Aggravation of Pre-existing Conditions:** No information found

### Section 3 - Composition / Information on Ingredients

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<th>Percent</th>
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<tbody>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>5%</td>
</tr>
<tr>
<td>Orange G</td>
<td>1936-15-8</td>
<td>0.002%</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>95%</td>
</tr>
</tbody>
</table>

### Section 4 - First Aid Measures

**Inhalation:** No information found.

**Ingestion:** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin Contact:** Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

### Section 5 - Fire-Fighting Measures

**Fire:** Not considered to be a fire hazard.  
**Explosion:** Non-explosive

**Fire Extinguishing Media:** SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Special Remarks on Fire Hazards:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

### Section 6 - Accidental Release Measures

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Section 7 - Handling and Storage

Handling Procedures and Equipment: Observe all warnings and precautions listed for the product. Avoid contact with skin and eyes.

Storage requirements: Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid).

Section 8 - Exposure Controls / Personal Protection

OSHA Permissible Exposure Limit: TWA: 2 CEIL: 2 (mg/m³)
ACGIH Threshold Limit Value: STEL: 2 (µg/m³) (TLV)
Airborne Exposure Limits: None established.
Consult local authorities for acceptable exposure limits.

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved): For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Section 9 - Physical and Chemical Properties

Appearance: Orange liquid
Odor: No odor
Odor Threshold: N/A
pH: No information found.
Melting Point: No information found.
Boiling Point: No information found.
Flash Point: No information found.
Evaporation Rate (BuAc=1): No information found.
Flammability: Nonflammable
Flammability/explosive limits: No information found.
Vapor Pressure (mm Hg): No information found.
Vapor Density (Air=1): No information found.
Relative Density: No information found.
Solubility: Easily soluble in water
Partition Coefficient: No information found.
Auto-ignition Temperature: No information found.
Decomposition Temperature: No information found.
Viscosity: N/A

Section 10 - Stability and Reactivity

Reactivity: Nonreactive
Stability: Stable
Hazardous Reactions: No information found
Conditions to Avoid: No information found.
Incompatible Materials: No information found.
Hazardous Decomposition Products: No information found.
Hazardous Polymerization: Will not occur.
Special Remarks on Reactivity: No information found.

**Section 11 - Toxicological Information**

Toxicological Data:
LD50/LC50: No information found

**Section 12 - Ecological Information**

Ecological impact information not found

**Section 13 - Disposal Considerations**

Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

**Section 14 - Transport Information**

Not a controlled material.

**Section 15 - Regulatory Information**

Federal and State Regulations: Not available.
Other Regulations: Not available.
Other Classifications:
DECL (EEC):
This product is not classified according to the EU regulations.
HMIS (U.S.A.):
Health Hazard: 1
Fire Hazard: 1
Reactivity: 0
Personal Protection: B
National Fire Protection Association (U.S.A.):
Health: 1
Flammability: 1
Reactivity: 0
Specific hazard:
Protective Equipment: Gloves. Safety glasses.

**Section 16 - Other Information**

Updated June 11, 2015

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