Printing date 08/14/2019

Reviewed on 08/12/2019

1 Identification

- · Product identifier
- Trade name: Lead Standard Stock Solution 5.0g Pb/gal Prepared to ASTM D3237-17
- · Article number: SPX770
- 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

	GHS02 Flame	
Flam. Liq.	2 H225 Highly flammable liquid and vapor.	
	GHS08 Health hazard	
Carc. 2	H351 Suspected of causing cancer.	
Repr. 1A	H360 May damage fertility or the unborn child.	
Eye Dam.	GHS05 Corrosion 1 H318 Causes serious eye damage. GHS07	
Acute Tox.	4 H302 Harmful if swallowed.	
Acute Tox.	4 H332 Harmful if inhaled.	
Skin Irrit. 2	2 H315 Causes skin irritation.	
STOT SE 3	B H335 May cause respiratory irritation.	
Label elem GHS label	elements The product is classified and labeled according to the Globally Harmonized System	(<i>GHS</i>). . on page 2



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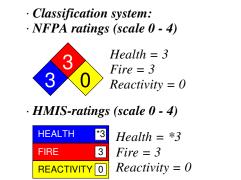
(Contd. of page 1) · Hazard pictograms GHS02 GHS05 GHS07 GHS08 · Signal word Danger · Hazard-determining components of labeling: Methyl Isobutyl Ketone (4-Methyl-2-pentanone) methyltrioctylammonium chloride · Hazard statements Highly flammable liquid and vapor. Harmful if swallowed or if inhaled. Causes skin irritation. Causes serious eye damage. Suspected of causing cancer. May damage fertility or the unborn child. May cause respiratory irritation. · Precautionary statements Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing 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/eye protection/face protection. If swallowed: Call a poison center/doctor if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. IF exposed or concerned: Get medical advice/attention. Specific treatment (see on this label). Rinse mouth. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. In case of fire: Use for extinction: CO2, powder or water spray. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. (Contd. on page 3)

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· 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: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	88.917%
CAS: 5137-55-3	methyltrioctylammonium chloride	10.906%
CAS: 7758-95-4	Lead Chloride	0.177%

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.

• After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. 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: Immediately call a 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:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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- For safety reasons unsuitable extinguishing agents: Water with full jet
- Special hazards arising from the substance or mixture No further relevant information available.

• Advice for firefighters

· Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

	tions, protective equipment and emergency procedures equipment. Keep unprotected persons away.	
	recautions: Do not allow to enter sewers/ surface or ground water.	
	terial for containment and cleaning up:	
	d-binding material (sand, diatomite, acid binders, universal binders, .	sawdust).
Use neutralizing		
Dispose contami	nated material as waste according to item 13.	
Ensure adequate		
· Reference to oth		
	information on safe handling.	
	information on personal protection equipment.	
	r disposal information.	
	criteria for Chemicals	
· PAC-1:		
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	75 ppm
CAS: 5137-55-3	methyltrioctylammonium chloride	0.67 mg/m ³
CAS: 7758-95-4	Lead Chloride	$0.2 \ mg/m^3$
· PAC-2:		· · · · · · · · · · · · · · · · · · ·
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	500 ppm
CAS: 5137-55-3	methyltrioctylammonium chloride	$7.4 mg/m^3$
CAS: 7758-95-4	Lead Chloride	160 mg/m ³
· PAC-3:		
CAS: 108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	3000* ppm
CAS: 5137-55-3	methyltrioctylammonium chloride	44 mg/m ³
	Lead Chloride	940 mg/m ³

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 ignition sources away - Do not smoke. Protect against electrostatic charges. Keep respiratory protective device available.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.

⁻ US

Printing date 08/14/2019 Reviewed on 08/12/2019 Trade name: Lead Standard Stock Solution 5.0g Pb/gal Prepared to ASTM D3237-17 (Contd. of page 4) · Further information about storage conditions: Keep receptacle tightly sealed. Store in cool, dry conditions in well sealed receptacles. · 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: The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the remaining constituent has no known exposure limits. CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone) PEL Long-term value: 410 mg/m³, 100 ppm *REL* Short-term value: 300 mg/m³, 75 ppm Long-term value: 205 mg/m³, 50 ppm Short-term value: 307 mg/m³, 75 ppm TLVLong-term value: 82 mg/m³, 20 ppm BEI CAS: 7758-95-4 Lead Chloride PEL Long-term value: 0.05 mg/m³ as Pb; See 29 CFR 1910.1025 REL Long-term value: 0.05* mg/m³ as Pb; *8-hr TWA; See Pocket Guide App. C TLV Long-term value: 0.05 mg/m³ as Pb; BEI · Ingredients with biological limit values: CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone) BEI 1 mg/L LD50 Intraperitoneal: urine Time: end of shift LD50: MIBK CAS: 7758-95-4 Lead Chloride 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. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Store protective clothing separately. Avoid contact with the skin. Avoid contact with the eyes and skin.

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- 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 \cdot *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

Information on basic physical and General Information	chemical properties
Appearance:	
Form:	Liquid
Color:	Clear water white
Odor:	Distinct
Odor threshold:	Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	114 °C (237.2 °F)
Flash point:	14 °C (57.2 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	460 °C (860 °F)
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapo mixtures are possible.

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	(0	Contd. of page
Explosion limits:		
Lower:	1.7 Vol %	
Upper:	9 Vol %	
Vapor pressure at 20 °C (68 °F):	8 hPa (6 mm Hg)	
Density at 20 °C (68 °F):	1.00116 g/cm ³ (8.35468 lbs/gal)	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix.	
Partition coefficient (n-octanol/wate	e r): Not determined.	
Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:		
Organic solvents:	88.9 %	
VOC content:	88.92 %	
	890.2 g/l / 7.43 lb/gal	
Solids content:	0.2 %	
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 1,091 mg/kg (rat)

Inhalative LC50/4h 9.33-18.7 mg/l (rat)

CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)

Inhalative LC50/4h 11 mg/l (ATE)

CAS: 7758-95-4 Lead Chloride

Oral LD50 500 mg/kg (ATE)

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2B

2A

R

Inhalative LC50/4h 11 mg/l (ATE)

· Primary irritant effect:

• on the skin: Irritant to skin and mucous membranes.

 \cdot on the eye: Strong irritant with the danger of severe eye injury.

• Sensitization: No sensitizing effects known.

· Additional toxicological information:

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

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)

CAS: 7758-95-4 Lead Chloride

· NTP (National Toxicology Program)

CAS: 7758-95-4 Lead Chloride

· 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. Must not reach bodies of water or drainage ditch undiluted or unneutralized.

- 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.

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UN-Number DOT, IMDG, IATA	UN1992
UN proper shipping name	
DOT IMDG	Flammable liquids, toxic, n.o.s. (Lead Chloride) FLAMMABLE LIQUID, TOXIC, N.O.S. (Lead Chloride), MARI
IATA	POLLUTANT FLAMMABLE LIQUID, TOXIC, N.O.S. (Lead Chloride)
Transport hazard class(es)	
DOT	
RAMMARE LOCIO	
Class Label	3 Flammable liquids 3, 6.1
IMDG	
Class Label	3 Flammable liquids 3/6.1
Label IATA	3/6.1
Label	
Label IATA Class Label Packing group	3/6.1 3 Flammable liquids 3 (6.1)
Label IATA Class Label Packing group DOT, IMDG, IATA	3/6.1 3 Flammable liquids
Label IATA Class Label Packing group	3/6.1 3 Flammable liquids 3 (6.1)
Label IATA Class Label Packing group DOT, IMDG, IATA Environmental hazards: Marine pollutant: Special precautions for user	3/6.1 3 Flammable liquids 3 (6.1) II Symbol (fish and tree) Warning: Flammable liquids
Label IATA IATA Class Label Packing group DOT, IMDG, IATA Environmental hazards: Marine pollutant: Special precautions for user Danger code (Kemler):	3/6.1 3 Flammable liquids 3 (6.1) II Symbol (fish and tree) Warning: Flammable liquids 336
Label IATA Class Label Packing group DOT, IMDG, IATA Environmental hazards: Marine pollutant: Special precautions for user	3/6.1 3 Flammable liquids 3 (6.1) II Symbol (fish and tree) Warning: Flammable liquids 336 F-E,S-D Heavy metals and their salts (including their organometal
Label IATA IATA Class Label Packing group DOT, IMDG, IATA Environmental hazards: Marine pollutant: Special precautions for user Danger code (Kemler): EMS Number:	3/6.1 3 Flammable liquids 3 (6.1) II Symbol (fish and tree) Warning: Flammable liquids 336 F-E,S-D

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	(Contd. of page 9
· Transport/Additional information:	
·DOT	
• Quantity limitations	On passenger aircraft/rail: 1 L
	On cargo aircraft only: 60 L
· IMDG	
· Limited quantities (LQ)	1L
\cdot Excepted quantities (EQ)	Code: E2
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (LEAI CHLORIDE), 3 (6.1), II

15 Regulatory information

 \cdot Safety, health and environmental regulations/legislation specific for the substance or mixture \cdot Sara

· Section 355 (extremely hazardous substances):	
None of the ingredients is listed.	
· Section 313 (Specific toxic chemical listings):	
CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	
CAS: 7758-95-4 Lead Chloride	
· TSCA (Toxic Substances Control Act):	
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	ACTIVE
methyltrioctylammonium chloride	ACTIVE
Lead Chloride	ACTIVE
· Hazardous Air Pollutants	
CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	
CAS: 7758-95-4 Lead Chloride	
· Proposition 65	
· Chemicals known to cause cancer:	
CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	
CAS: 7758-95-4 Lead Chloride	
· 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: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	
· Carcinogenic categories	
· EPA (Environmental Protection Agency)	
CAS: 108-10-1 Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	I
CAS: 7758-95-4 Lead Chloride	B2
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A3

• TLV (Threshold Limit Value established by ACGIH)

CAS: 7758-95-4 Lead Chloride

· 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*



· Signal word Danger

· Hazard-determining components of labeling: Methyl Isobutyl Ketone (4-Methyl-2-pentanone) methyltrioctylammonium chloride · Hazard statements Highly flammable liquid and vapor. Harmful if swallowed or if inhaled. Causes skin irritation. Causes serious eye damage. Suspected of causing cancer. May damage fertility or the unborn child. May cause respiratory irritation. · Precautionary statements Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. *Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment.* Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing 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/eye protection/face protection. If swallowed: Call a poison center/doctor if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. IF exposed or concerned: Get medical advice/attention. Specific treatment (see on this label). Rinse mouth. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. In case of fire: Use for extinction: CO2, powder or water spray. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. (Contd. on page 12)

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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 Revsion 0.0, 08-14-2019, Creation date for SDS. STN 08/14/2019/-· Abbreviations and acronyms: 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 Flam. Liq. 2: Flammable liquids – Category 2 Acute Tox. 4: Acute toxicity – Category 4 Skin Irrit. 2: Skin corrosion/irritation – Category 2 Eye Dam. 1: Serious eye damage/eye irritation - Category 1 Carc. 2: Carcinogenicity – Category 2
- Repr. 1A: Reproductive toxicity Category 1A
- STOT SE 3: Specific target organ toxicity (single exposure) Category 3