Safety Data Sheet
acc. to OSHA HCS

Printing date 11/28/2017 *Reviewed on 11/28/2017*

1 Identification

· **Product identifier**

· **Trade name: Lead Dioxide, Laboratory Grade Powder**

· **Article number:** L3239
· **CAS Number:**
1309-60-0
· **EC number:**
215-174-5
· **Index number:**
082-001-00-6

· **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. 1A	H360	May damage fertility or the unborn child.
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure.

GHS07

Acute Tox. 4	H302	Harmful if swallowed.
Acute Tox. 4	H332	Harmful if inhaled.

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

GHS07 GHS08

· **Signal word** Danger
· **Hazard statements**
Harmful if swallowed or if inhaled.

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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.
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 INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Rinse mouth.
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 = 0
Reactivity = 1

The substance possesses oxidizing properties.
· **HMIS-ratings (scale 0 - 4)**

*Health = *2*
Fire = 0
Reactivity = 1

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
1309-60-0 Lead Dioxide (Lead Peroxide)
· **Identification number(s)**
· **EC number:** *215-174-5*
· **Index number:** *082-001-00-6*

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.

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· **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:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **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:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.
· **Environmental precautions:** No special measures required.
· **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **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:** 0.17 mg/m³
· **PAC-2:** 140 mg/m³
· **PAC-3:** 810 mg/m³

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:** Keep respiratory protective device available.

· **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:** Keep receptacle tightly sealed.

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· **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: 1309-60-0 Lead Dioxide (Lead Peroxide)	
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: 1309-60-0 Lead Dioxide (Lead Peroxide)	
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.
· **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.

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· **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:**	
Form:	Powder
Color:	Brownish black
· **Odor:**	Odorless
· **Odor threshold:**	Not determined.
· **pH-value:**	Not applicable.
· **Change in condition**	
Melting point/Melting range:	290 °C (554 °F)
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Product is not flammable.
· **Ignition temperature:**	
Decomposition temperature:	Not determined.
· **Auto igniting:**	Not determined.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure:**	Not applicable.
· **Density at 20 °C (68 °F):**	9.375 g/cm³ (78.23438 lbs/gal)
· **Bulk density:**	1,500 kg/m³
· **Relative density**	Not determined.
· **Vapor density**	Not applicable.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with**	
Water:	Not determined.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· **Other information**	No further relevant information available.

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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:**		
Oral	LD50	500 mg/kg (ATE)
Inhalative	LC50/4 h	11 mg/l (ATE)
	Intraperitoneal	220 mg/kg (Hamster)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**

· **Carcinogenic categories**
· **IARC (International Agency for Research on Cancer)** 2A
· **NTP (National Toxicology Program)** R
· **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not 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:** Generally not hazardous for water
· **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.

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· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**
· **DOT, IMDG, IATA** UN1872

· **UN proper shipping name**
· **DOT** Lead dioxide
· **IMDG, IATA** LEAD DIOXIDE

· **Transport hazard class(es)**

· **DOT**

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

· **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** III

· **Environmental hazards:** Environmentally hazardous substance, solid
· **Marine pollutant:** No

· **Special precautions for user** Warning: Oxidizing substances
· **Danger code (Kemler):** 56
· **EMS Number:** 5.1-06
· **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.

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· **Transport/Additional information:**

· **DOT**

· **Quantity limitations**	On passenger aircraft/rail: 25 kg On cargo aircraft only: 100 kg
· **IMDG**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **UN "Model Regulation":**	UN 1872 LEAD DIOXIDE, 5.1 (6.1), III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**
· **Section 355 (extremely hazardous substances):** Substance is not listed.
· **Section 313 (Specific toxic chemical listings):** Substance is listed.

· **TSCA (Toxic Substances Control Act):**
Lead Dioxide (Lead Peroxide)

· **Proposition 65**
· **Chemicals known to cause cancer:** Substance is listed.
· **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
· **Chemicals known to cause developmental toxicity:** Substance is not listed.

· **Carcinogenic categories**
· **EPA (Environmental Protection Agency)** B2
· **TLV (Threshold Limit Value established by ACGIH)** A3
· **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07 GHS08

· **Signal word** Danger
· **Hazard statements**
Harmful if swallowed or if inhaled.
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.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.

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Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Rinse mouth.
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**
11-28-2017: review SDS for accuracy. STN
Creation date for SDS 02-05-2014. STN
11/28/2017 / -
· **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
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
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
Acute Tox. 4: Acute toxicity – Category 4
Carc. 2: Carcinogenicity – Category 2
Repr. 1A: Reproductive toxicity – Category 1A
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2