Safety Data Sheet (KOH)

I. Product Identification

Product Name: Oxygen Sensor (Series AII, GPR, PSR, Private Label derivations)
Product Use: Oxygen Sensors
Manufacturer: Analytical Industries Inc.
Address: 2855 Metropolitan Place, Pomona, CA 92767 USA
Contact Information: Tel: 909-392-6900, Fax: 909-392-3665, email: info@aii1.com
Emergency Number:

Date Prepared: January 1, 1995
Date Revised: January 31, 2023

II. Hazardou(s) Identification

GHS Classification:

Lead (Pb)	**Health**	**Environmental**	**Physical**
	Acute Toxicity- Category (Inhalation)	Acute Aquatic Toxicity-Cat	NA
	Acute Toxicity- Category 4 (oral/dermal)	Chronic Aquatic Toxicity-Category 1	
	Carcinogenic- Category 2ty		
	Reproductive/Developmental- Category 2		
	Target organ Toxicity (Repeated) Category 2		
Potassium Hydroxide (KOH)	**Health**	**Environmental**	**Physical**
	Corrosive to Metal- Category 1	Acute Aquatic Toxicity-Cat	NA
	Acute Toxicity- Category 4 (oral)		
	Skin Corrosion-Category 1A		
	Serious Eye Damage-Category 1		

GHS Labels:
Potassium Hydroxide (KOH)
Symbols:

Hazardous Statements
- Danger
- May be corrosive to metal
- Harmful if swallowed
- Causes severe skin burns and eye damage
- Harmful to aquatic life

Precautionary Statements
- Wash skin thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Avoid release to the environment.
- Wear protective gloves/ protective clothing/ eye protection/ face protection.
- IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortabl for breathing.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact len if present and easy to do. Continue rinsing. Immediately call a POISON CENTER f doctor/ physician.
- Wash contaminated clothing before reuse.
- Absorb spillage to prevent material damage.
- Store in corrosive resistant stainless steel container with a resistant inner liner.
- Dispose of contents/ container to an approved waste disposal plant.

GHS Labels:
Lead (Pb)

Safety Data Sheet (KOH)

Symbols:

Hazardous Statements

- Warning !
- Harmful if swallowed
- Suspected of causing cancer.
- Suspected of damaging fertility or the unborn child.
- May cause damage to organs through prolonged or repeated exposure.
- Very toxic to aquatic life with long lasting effects.

Precautionary Statements

- If breathed in, move person into fresh air. In not breathing, give artificial respira Consult a physician.
- In case of skin contact, wash off with soap and plenty of water.
- In case of eye contact, flush eyes with water as a precaution.
- If swallowed, rinse mouth with water.

III. Composition /Information on Ingredients

Material	C.A.S. #	Weight %	GHS Classification	Notes
Lead (Pb)	7439-92-1	50-75	Carc 1A;H350 Aquatic Acute 1:H400	Substance classified with a health & Environmental hazard. Substance with a work place limit
Potassium Hydroxide (KOH)	1310-58-3	1.0-10	Acute Tox. 4; H302 Skin Corr.1A; H314	Substance classified with a health & Environmental hazard. Substance with a work place limit.

IV. First Aid Measures

4.1. Description of aid measures

General:

- In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation:

- Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate

Eyes:

- Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Skin:

- Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion:

- Do NOT induce vomiting. Rinse mouth and slowly drink several glasses of water. Call a physician. Do NOT give anything by mouth to an unconscious or

4.2. Most important symptoms and effects, both acute and delayed

- The most important known symptoms and effects are described in the labelling (see section II) and/or in section XI

V. Fire -Fighting Measures

5.1. Extinguishing media

- Use standard fire fighting media on surrounding materials including water spray, foam, and carbon dioxide. (Do not use dry chemical extinguisher

5.2. Special hazards arising from the substance or mixture

- Lead Oxides.

5.3. Advice for fire-fighters

- Wear self-contained breathing apparatus for firefighting if necessary.

5.4. Further Information • Gives off hydrogen by reaction with metals.

VI. Accidental release measures

Note: The Oxygen sensor contains a strong basic solution encapsulated in a plastic housing. Under normal operating conditions the solution (electrolyte) is never exposed. In case of a leak please observe the following instructions:

6.1. Personal precautions, protective equipment and emergency procedures • Use appropriate personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section

6.2. Environmental precautions • Do not allow spills to enter drains or waterways. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3.Methods and material for containment and cleaning up • Contain spillage. Neutralize spill with soda ash or lime. Carefully place material into clean dry contain and cover. Flush spill area with water. Avoid creating dust.

VII. Handling and storage

7.1. Precautions for safe handling • Under normal circumstances the lead anode and potassium hydroxide electrolyte are sealed inside the oxygen sensor which is then\ sealed in a polyethylene bag and placed in a cardboard box for shipment) and do not present a health hazard. The following guidelines are provided in the event an oxygen sensor leaks
• Before opening the bag containing the sensor cell, check the sensor cell for leakage. If the sensor cell leaks, do not open the bag. If there is liquid around the cell while in the instrument, put on gloves and eye protection before removing the

7.2. Conditions for safe storage, including any incompatibilities • Store sensors in a cool ,dry and well-ventilated places. Exercise due caution to prevent damage to or leakage from the container. Keep containers closed when

7.3. Specific end use(s) • Apart from the uses mentioned in section I no other specifies are stipulated.

VIII. Exposure Controls/Personal Protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0001310-58-3	Potassium hydroxide	OSHA	No Establish Limits
		ACGIH	Ceiling: 2mg/m3
		NIOSH	Ceiling: 2mg/m3
		Supplier	No Establish Limits
007439-92-1	Lead (Pb)	OSHA	(1910.1025)TWA 0.050mg/m3
		ACGIH	TWA:0.05 mg/m3R,2B,2A
		NIOSH	TWA (8 Hour)0.050 mg/m3
		Supplier	No Establish Limits

Carcinogen Data

CAS No.	Ingredient	Source	Value
0001310-58-3	Potassium hydroxide	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
007439-92-1	Lead (Pb)	OSHA	Select Carcinogen: Yes

NTP	Known: No; Suspected: Yes
IARC	Group 1: No; Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory • If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes • Chemical splash goggles

Skin • Apron, face shield Wear gloves. Gloves must be resistant to corrosive materials. Nitrile or PVC gloves are suitable. Do not use cotton or leather gloves.

Engineering Controls • Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices • Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly

IX. Physical / Chemical Characteristics

9.1 Information on basic physical and chemical properties

Material / Component:	**Lead (Pb) - Anode**	**Potassium Hydroxide (KOH) - Electrolyte**
Appearance	Article Solid	**Form:** Liquid; **Color:** Clear Translucent
Odor	None	None
Odor threshold	Not Measured	Not Measured
pH	Not Measured	>13
Melting point / freezing point	>328° C	Not Measured
Initial boiling point and boiling range	>1320° C	Not Measured
Flash Point	Not Measured	>100° C
Evaporation rate (Ether = 1)	Not Measured	Not Measured
Flammability (solid, gas)	Not Applicable	Not Measured
Upper/lower flammability or explosive limits	Not Measured	Not Measured
Vapor pressure	Not Measured	Not Measured
Vapor Density	Not Measured	Not Measured
Specific Gravity	Not Measured	Not Measured
Solubility in Water	Insoluble	100% (Water based solution)
Partition coefficient n-octanol/water (Log Kow)	Not Measured	Not Measured
Auto-ignition temperature	Not Measured	Not Measured
Decomposition temperature	Not Measured	Not Measured
Viscosity (cSt)	Not Measured	Not Measured

9.2. Other information

No other relevant information**.**

X. Stability and Reactivity

10.1. Reactivity • Hazardous Polymerization will not occur

10.2. Chemical stability • Stable under normal circumstances

10.3. Possibility of hazardous reactions • Incompatible with strong oxidizers, leather and halogenated compounds. Product will react with 'soft' metals such as aluminum, tin, magnesium, and zinc

releasing flammable hydrogen gas.

10.4. Conditions to avoid • Excessive heat and open flame.

10.5. Incompatible materials • Aluminum, organic materials, acid chlorides, acid anhydrides, magnesium, copper. Avoid contact with acids and hydrogen peroxide >52%

10.6. Hazardous decomposition products • Toxic fumes.

XI. Toxicological Information

11.1 Information on toxicological effects (Potassium Hydroxide)

Acute toxicity
- LD50 Oral - Rat- 333mg/kg
- Inhalation : no data available
- Dermal: no data available

Skin Corrosion/irritation • Skin Rabbit- Severe skin irritation 24 h

Serious eye damage/eye irritation • Eyes Rabbit- Corrosive to eyes (OECD Test Guideline 405

Respiratory or skin sensitization • No Data Available

Germ cell mutagenicity • No Data Available

Carcinogenicity

IARC • No component of this product presents at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH • No component of this product presents at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP • No component of this product presents at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP

OSHA • No component of this product presents at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA

Reproductive toxicity • No Data Available

Specific target organ toxicity-single exposure • No Data Available

Specific target organ toxicity-repeated exposure • No Data Available

Additional information • RTECS:TT2100000

11.2 Information on toxicological effects (Lead)

Acute toxicity
- Inhalation : no data available
- Dermal: no data available

Skin Corrosion/irritation • No Data Available

Serious eye damage/eye irritation • No Data Available

Respiratory or skin sensitization • No Data Available

Germ cell mutagenicity • Rat - Cytogenetic analysis

Carcinogenicity

• Limited evidence of carcinogenicity in animal studies
IARC • 2B-Group 2B. Possibly carcinogenic to humans (Lead)
NTP • Reasonably anticipated to be a human carcinogen (Lead)
OSHA • 1910.1025 (Lead)

Reproductive toxicity

• Suspected human reproductive toxicant
• Rat-Inhalation: Effects on Newborn; Biochemical metabolic
• Rat-Oral: Effects on Newborn; Behavioral
• Mouse-Oral: Effect on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Development Toxicity

• Rat-Inhalation: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).
• Rat-Oral: Specific Developmental Abnormalities: Blood and lymphatic system (including sleep and marrow). Effects on Newborn: Growth statistics (e.g.,
• Rat-Oral: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.
• Mouse-Oral: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Specific target organ toxicity – single exposure

• No Data Available

Specific target organ toxicity – repeated exposure

• May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

• No Data Available

Additional Information

• RTECS: OF7525000

XII. Ecological Information

12.1. Toxicity
Very toxic to aquatic life
Aquatic Ecotoxicity

Ingredient	96 hr. LC50 fish, mg/l	48 hr. EC50 crustacea, mg/l	ErC50 algae, mg/l
Lead Compounds (as Pb) - (7439-92-1)	0.44, Cyprinus carpio	4.40, Daphnia magna	0.25 (72 hr.), Scenedesmus subspicatus
Potassium hydroxide. - (1310-58-3)	Not Available	Not Available	Not Available

12.1. Persistence and degradability

• There is no data available on the preparation itself.

12.3. Bioaccumulative potential

• Not Measured

12.4. Mobility in soil

• No Data Available

12.5. Result of PBT and vPvB assessment

• This Product contains no PBT and vPvB chemicals.

12.6. Other adverse effects

• Lead is bioaccumulative in most aquatic life and mammals. It is highly mobile as lead dust or fume, yet forms complexes with organic material which limits its

XIII. Disposal Considerations

13.1. Waste treatment methods

• Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.
• Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

XIV. Transport Information

DOT:

• Regulated. Refer to Small Quantity Exceptions: 49 CFR 173.4
• UN3266, Corrosive liquid, basic, inorganic, n.o.s., (potassium hydroxide, lead), 8, II NOTE: This description is used for shipping purposes when not using Analytical Industries Inc. US DOT Approval.
• UN3363, Dangerous Goods in Machinery or Dangerous Goods in Apparatus, 9. NOTE: This description is used when shipping under the US DOT Approval.

IATA:

• Regulated. Meets criteria for IATA Dangerous Goods in Excepted Quantities, Secti

Environmental hazards
IMDG

• Marine Pollutant: Yes (Lead Compounds (as Pb))

XV. Regulatory Information

Regulatory Overview

• The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA)

• All components of this material are either listed or exempt from listing on the TSCA Inventory

WHMIS Classification

• D2A E

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): Yes

EPCRA 311/312 Chemicals and RQs (lbs.):

• Lead Compounds (as Pb) (10.00)
• Potassium hydroxide. (1,000.00)

EPCRA 302 Extremely Hazardous :

•(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals:

• Lead Compounds (as Pb)

Proposition 65 - Carcinogens (>0.0%):

• Lead Compounds (as Pb)

Proposition 65 - Developmental Toxins (>0.0%):

• Lead Compounds (as Pb)

Proposition 65 - Female Repro Toxins (>0.0%):

• Lead Compounds (as Pb)

Proposition 65 - Male Repro Toxins (>0.0%):

• Lead Compounds (as Pb)

N.J. RTK Substances (>1%):

• Lead Compounds (as Pb)
• Potassium hydroxide.

XVI. Other Information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of

any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H350 May cause cancer.
H400 Very toxic to aquatic life.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not

All chemicals may pose unknown hazards and should be used with caution. While the information contained in this Material Safety Data Sheet is believed to be correct and is offered for your information, consideration and investigation, Analytical Industries Inc assumes no responsibility of the completeness or accuracy of the information contained herein.

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