



MATERIAL SAFETY DATA SHEET

Analytical Sensors & Instruments Ltd.

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Section I. PRODUCT IDENTIFICATION

Product Name: Solution, Lead Standard, 0.1000 ± 0.0005 M, 0.1 M Pb ²⁺ , or 1,000 ppm Pb ²⁺	Catalog No. SD0PB1-xx or SD0PB2-xx	Effective Date 07 May, 2008
Hazardous Shipment Labeling: DOT: IATA: Toxic Liquids, Oxidizing (Lead Nitrate); UN Number: 3122; Class: 6.1 (Toxic Substance) & 5.1 (Oxidizing Agent); Packing Group: II		
Prepared by: George C. Barone III, Ph.D.	Title: Senior Research Chemist	
Approved by: George C. Barone III, Ph.D.	Title: Director Regulatory Compliance	

WARNING: POISON! DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. MAY BE FATAL IF SWALLOWED OR INHALED. NEUROTOXIN. SEE HEALTH HAZARD DATA!

Section II. HAZARDOUS INGREDIENTS/Identity Information

Hazardous Components* Specific Chemical Identity; Common Name(s)	CAS No.	%	OSHA PEL	ACGIH TLV	LD ₅₀ mg/Kg
Lead Nitrate (Anhydrous Salt) (Pb(NO ₃) ₂)	10099-74-8	<4	0.05 mg/m ³ (TWA)	0.05 mg/m ³ (TWA)	1,330 (ORL-GPG)
Deionized Water (H ₂ O)**	7732-18-5	> 96	None Listed	None Listed	NA

- OSHA PEL Exposure Limit: For lead, metal, and inorganic dust and fumes as Pb
- ACGIH TLV Exposure Limit: For leads, elemental and inorganic compounds, as Pb

Section III. PHYSICAL/CHEMICAL DATA AND CHARACTERISTICS

Boiling Point at 760 mmHg	NA	Freezing Point	NA
Specific Gravity (H₂O = 1)	NA	Vapor Pressure at 25°C	NA
pH at 25°C	NA	Solubility in water, % by wt	Miscible
Volatiles, % by wt	NA	Evaporation Rate (B A = 1)	NA
Vapor Density (AIR = 1): NA			
Appearance and Odor: Clear, colorless, and odorless liquid			

Section IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): NA	Auto-ignition Temperature: NA	Flammable Limits In air, % by volume:	Lower NA	Upper NA
Extinguishing Media: Dry chemical, water, foam, or CO ₂ Use media appropriate to surrounding fire conditions				
Special Fire Fighting Procedures: NONE, this solution is non-flammable. As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.				
Unusual Fire and Explosion Hazards: This substance is an oxidizer and the heat of reaction with reducing agents or combustibles may cause ignition. Strong oxidizers may explode when shocked, or exposed to heat, flame, or friction.				

Section V. REACTIVITY DATA

Stability: Unstable Stable X	Conditions to Avoid: Extreme Temperatures, reducing agents
Incompatibility (Materials to Avoid): Reducing Agents, magnesium, sodium metals, or strong mineral acids and bases	
Hazardous Decomposition or Byproducts: Toxic oxides of nitrogen and lead may be emitted if heated to decomposition	
Hazardous Polymerization: May Occur Will Not Occur X	Conditions to Avoid: Heating to decomposition, reducing agents, and incompatibles.

*Chemicals that are not classified as hazardous by U.S. OSHA guidelines (29 CFR Parts 1915.2 or 1916.2) will not necessarily be listed herein even though one or more may be in this product.

** Non-hazardous component

NA = Not available/Not applicable



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Section VI. HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation? YES	Skin? YES	Ingestion? YES
Health Hazards (Acute and Chronic): Poison, cumulative poison, exposure to small quantities can accumulate to toxic levels. Lead poisoning can lead to abdominal pain, spasms, nausea, vomiting, headache, muscle weakness, metallic taste in mouth, insomnia, dizziness, shock, insomnia, coma, and death in extreme cases. This list is not complete. Lead is listed as a teratogen and reproductive toxin. In pregnant women it could have a negative impact on the normal development of the fetus.			
Carcinogenicity:	NTP? No	IARC Monographs? Yes – 2B	OSHA Regulated? No
Signs and Symptoms of Exposure: May cause irritations to eyes, skin, or mucous membranes. Other symptoms may include abdominal pain, spasms, nausea, vomiting, headache, muscle weakness, metallic taste in mouth, insomnia, dizziness, shock, insomnia, coma, as well as others.			
Medical Conditions Generally Aggravated by Exposure: Persons with pre-existing kidney, nerve, circulatory disorders, skin, or eye disorders may be more susceptible to the effects of this substance.			
Emergency and First Aid Procedures: Eye Contact: Immediately flush eyes with copious amounts of water for at least 15 minutes lifting lower and upper eyelid occasionally. Get medical attention immediately. Skin Contact: Wash effected area with soap and copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse. Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately. Inhalation: Remove to fresh air, if not breathing give artificial respiration, if breathing is difficult give oxygen. Get medical attention immediately.			

Section VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material is Released or Spilled: Ventilate area of leak or spill. Wear personal protective equipment. Spills: contain and containerize for reclamation or disposal. US regulations (CERCLA) require reporting spills and releases to soil, water, and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802. Observe all Federal, State and Local laws when disposing of this product.
Waste Disposal Method: Observe all Federal, State and Local laws when disposing of this product.
Precautions to Be taken in Handling and Storing: Avoid contact with eyes. Wash hands thoroughly after use. NFPA Rating: Scale (0-4): Health – 3 (Severe (Poison)), Fire – 0, Reactivity – 3 (Severe (Oxidizer)), Specific – Oxidizer.
Other Precautions: Is found on TSCA, SARA 311/312, and SARA 313 Chemical Category lists. This is listed as #10 on CERCLA list. THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

Section VIII. CONTROL MEASURES

Respiratory Protection (Specify Type) Wear appropriate respirator if ventilation is inadequate		
Ventilation	Local Exhaust: Required to keep employee exposure below the Airborne Exposure Limit.	Special: NONE
Ventilation	Mechanical (General): NONE	Other: NONE
Protective Gloves: Disposable latex gloves or similar	Eye Protection: Safety Glasses with top and side shields	
Other Protective Clothing or Equipment: Eye wash station should be available. Wear protective garments if sensitive skin or risk of contamination is present.		
Work/Hygienic Practices: No eating or drinking in work area. Wash hands after working with this product.		

Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of this product or any materials designated. Safe use of the materials is the responsibility of the user.