

SDS DATE: May 29, 2023

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** Alkaline Phosphatase Assay  
**PRODUCT CODES:** Cat# MA-0109  
**RESTRICTIONS ON USE:** For laboratory research purposes only. Not for drug or household use.  
**MANUFACTURER:** AkrivisBio, Inc.  
**ADDRESS:** 48511 Warm Springs Blvd., Suite 213, Fremont, CA 94539  
**EMERGENCY PHONE:** 408-739-9315  
**OTHER CALLS:**  
**FAX PHONE:**  
**EMAIL:** [sds@akrivisbio.com](mailto:sds@akrivisbio.com)

**SECTION 2: HAZARDS IDENTIFICATION**

Component	Description	Volume	Safety Information
Assay Buffer	Proprietary Buffer	100 ml	No hazards
pNPP (10 TAB)	Tablet	1 vial	No hazards
Alkaline Phosphatase	Lyophilized (contains BSA)	1 vial	See below
Stop Solution	Liquid (contains NaOH)	10 ml	See below

**Bovine Serum Albumin (BSA):**

**Emergency Overview:**

**GHS Classification:** Acute Toxicity; Oral, Category 4

**GHS Label elements, including precautionary statements**



**Pictogram:**

**Signal word:** Warning

**Hazard statement(s):** H302: Harmful if swallowed.

**Precautionary statements:** P264: Wash {hands} thoroughly after handling.  
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P330: Rinse mouth.

**Adverse Human Health:** Harmful if swallowed.

**Effects and Symptoms:** Material may be irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation or skin absorption.  
May cause eye, skin, or respiratory system irritation.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated

**HMIS Classification:**

Health hazard: 1  
Flammability: 0  
Physical hazards: 0

**NFPA Rating**

Health Hazard: 1 Fire: 0  
Reactivity Hazard: 0

**Potential Health Effects**

Inhalation: May be harmful by inhalation. Material may be irritating to the mucous membranes and upper respiratory tract.

Skin: Harmful if absorbed through skin. May cause skin irritation.

Eyes: Cause eye irritation.

Ingestion: Harmful if swallowed

**Sodium hydroxide:**

**Emergency Overview**

**GHS Classification:**

Corrosive to metals (Category 1)  
Skin corrosion (Category 1A)  
Serious eye damage (Category 1)  
Acute aquatic toxicity (Category 3)

**GHS Label elements, including precautionary statements**

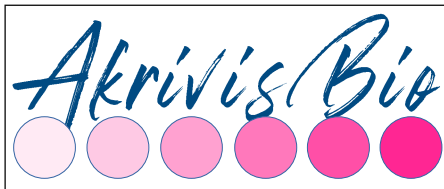
**Pictogram:**



**Signal word:** Danger

**Hazard statement(s):** H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H402 Harmful to aquatic life.

**Precautionary statement(s):** P234 Keep only in original container.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.



SDS DATE: May 29, 2023

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.  
P305 + P351 + P338 + P310 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 or doctor/ physician.  
P363 Wash contaminated clothing before reuse.  
P390 Absorb spillage to prevent material damage.  
P405 Store locked up.  
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.  
P501 Dispose of contents/ container to an approved waste disposal plant.

#### HMIS Classification

Health hazard: 3

Flammability: 0

Physical hazards: 1

#### NFPA Rating

Health Hazard: 3

Fire: 0

Reactivity Hazard: 0

#### Potential Health Effects

**Inhalation:** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Skin:** May be harmful if absorbed through skin. Causes skin burns.

**Eyes:** Causes severe eye burns.

**Ingestion:** May be harmful if swallowed.

---

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

---

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula	Concentration
Sodium hydroxide	1310-73-2	215-185-5	40.00	NaOH	≤10%
Bovine serum albumin (BSA)	9048-46-8	232-936-2	--	--	<0.5%

---

### SECTION 4: FIRST AID MEASURES

---

#### **Bovine Serum Albumin (BSA):**

**If inhaled:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

**In case of skin contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**In case of eye contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

**If swallowed:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. DO NOT induce vomiting unless directed to do so by medical personnel.

#### **Sodium hydroxide (NaOH):**

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact:** Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed:** DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

---

### SECTION 5: FIRE-FIGHTING MEASURES

---

#### **Bovine Serum Albumin (BSA):**

**Suitable extinguishing media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

**Unsuitable extinguishing media:** A solid water stream may be inefficient.

**Special protective equipment for fire fighters:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

**Further information:** No data available

#### **Sodium hydroxide (NaOH):**

**Condition of flammability:** Not flammable or combustible.

**Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for fire-fighters:** Wear self-contained breathing apparatus for firefighting if necessary.

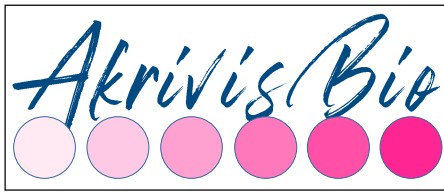
**Hazardous combustion products:** Hazardous combustion products formed under fire conditions— carbon oxides, nitrogen oxides.

---

### SECTION 6: ACCIDENTAL RELEASE MEASURES

---

#### **Bovine Serum Albumin (BSA):**



SDS DATE: May 29, 2023

**Personal precautions, Protective equipment and emergency procedures:** Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

**Environmental precautions:** Take steps to avoid release into the environment, if safe to do so.

**Methods for cleaning up:** Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations

**Sodium hydroxide (NaOH):**

**Personal precautions:** Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods for cleaning up:** Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wetbrushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

**SECTION 7: HANDLING AND STORAGE**

**Bovine Serum Albumin (BSA):**

**Precautions for safe handling:** Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid prolonged or repeated exposure. Conditions for safe

**Storage:** Keep container tightly closed. Store in accordance with information listed on the product insert.

**Sodium hydroxide (NaOH):**

**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - no smoking.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: -20 °C.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Bovine Serum Albumin (BSA):**

**Exposure controls:**

CAS#	Partial chemical name	Britain EH40	France VL	Europe
9048-46-8	Bovine serum albumin	No data	No data	No data
CAS#	Partial chemical name	OSHA TWEA	ACGIH TWA	Other limits
9048-46-8	Bovine serum albumin	No data	No data	No data

**Sodium hydroxide (NaOH):**

Components	CAS-No.	Value	Control parameters	Basis
Sodium hydroxide	1310-73-2	TWA	2 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) – Table Z-1 – Limits for Air Contaminants
		C	2 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Eye irritation Skin irritation		
		C	2 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Eye irritation Skin irritation		
		C	2 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits

**Personal protective equipment**

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

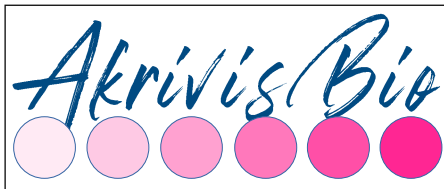
Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.



SDS DATE: May 29, 2023

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Property	Sodium hydroxide	BSA
Appearance:	Colorless liquid	A dry powder
pH	No data available	No data available
Water Solubility:	Soluble in water	No data available
Other Solubility:	No data available	No data available
Boiling Point (°C):	No data available	No data available
Melting Point (°C):	No data available	No data available
Flash Point (°C):	No data available	No data available
Ignition Temp. (°C):	No data available	No data available
Density:	No data available	No data available

**SECTION 10: STABILITY AND REACTIVITY**

Property	Sodium hydroxide	BSA
Chemical Stability:	Stable under recommended storage conditions	
Conditions to Avoid:	No data available	No data available
Materials to Avoid:	Acids, Organic materials, Chlorinated solvents, Aluminum, Phosphorus, Tin/tin oxides, Zinc	No data available
Hazardous decomposition products:	No data available	No data available

**SECTION 11: TOXICOLOGICAL INFORMATION**

**Bovine Serum Albumin (BSA):**

The toxicological effects of this product have not been thoroughly studied.

**Sodium hydroxide (NaOH):**

**Acute toxicity:** 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:** no data available

**Carcinogenicity:**

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

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

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

**Reproductive toxicity:** no data available

**Teratogenicity:** no data available

**Specific target organ toxicity – single exposure (GHS):** no data available

**Specific target organ toxicity – repeated exposure (GHS):** no data available

**Potential Health Effects**

**Inhalation:** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Skin:** May be harmful if absorbed through skin. Causes skin burns.

**Eyes:** Causes severe eye burns.

**Ingestion:** May be harmful if swallowed.

**Signs and Symptoms of Exposure:** Exposure may cause a burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

**Synergistic Effects:** no data available

**Additional information:** RTECS: not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Inhalation of vapors may cause: spasm, inflammation and edema of the bronchi, spasm, inflammation and edema of the larynx, Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

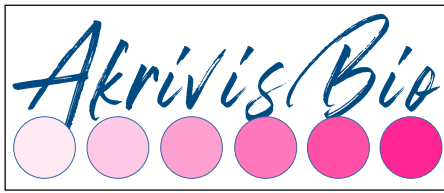
**SECTION 12: ECOLOGICAL INFORMATION**

**Bovine Serum Albumin (BSA):**

**Toxicity:** Avoid release into the environment. Runoff from fire control or dilution water may cause pollution. Persistence and degradability: No data available

**Bioaccumulative potential:** No data available

**Bio accumulative potential:** No data available



SDS DATE: May 29, 2023

**Mobility in soil:** No data available  
**PBT and vPvB assessment:** No data available

**Sodium hydroxide (NaOH):**

**Persistence and degradability:** no data available

**Toxicity:** no data available

**Bioaccumulative potential:** no data available

**Mobility in soil:** no data available

**PBT and vPvB assessment:** no data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

---

**SECTION 13: DISPOSAL CONSIDERATIONS**

---

**Bovine Serum Albumin (BSA):**

Waste Disposal Method: Dispose in accordance with local, state, and federal regulation.

**Sodium hydroxide (NaOH):**

**Product:** Observe all federal, state, and local environmental regulations.

**Contaminated packaging:** Dispose of as unused product.

---

**SECTION 14: TRANSPORT INFORMATION**

---

**Bovine Serum Albumin (BSA):**

**DOT (US):** Not dangerous goods

**IMDG:** Not dangerous goods

**IATA:** Not dangerous goods

**Sodium hydroxide:**

**DOT (US):** UN-Number: 1824, Class: 8, Packing group: II; Proper shipping name: Sodium hydroxide solution; Poison Inhalation Hazard: No

**IMDG:** UN-Number: 1824, Class: 8, Packing group: II; EMS-No: F-A, S-B; Proper shipping name: SODIUM HYDROXIDE SOLUTION

**IATA:** UN-Number: 1824, Class: 8, Packing group: II; Proper shipping name: Sodium hydroxide solution

---

**SECTION 15: REGULATORY INFORMATION**

---

**SARA 302 Components:** SARA 302: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components:** SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards:** Sodium hydroxide: Acute Health Hazard

**Massachusetts Right To Know Components:** Sodium hydroxide, CAS-No. 1310-73-2; Revision Date: 2007-03-01

**Pennsylvania Right To Know Components:**

Sodium hydroxide, CAS-No. 1310-73-2; Revision Date: 2007-03-01

**New Jersey Right To Know Components:**

Sodium hydroxide, CAS-No. 1310-73-2; Revision Date: 2007-03-01

**California Prop. 65 Components:** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**EU regulations**

Component	Risk Phrases	Safety Phrases
Sodium hydroxide	R35, R41, R52	S22, S36/37/39, S45, S61
BSA	--	--

---

**SECTION 16: OTHER INFORMATION:**

---

**OTHER INFORMATION:**

**PREPARATION INFORMATION:**

**DISCLAIMER:**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. AkrivisBio, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.