SDS DATE: September 06, 2023

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Sulfatase Activity Assay**
PRODUCT CODES: **Cat# MA-0163**
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**

SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
Sulfatase Assay Buffer	Proprietary Buffer	5 ml	No hazards
Sulfatase Substrate	Liquid	4 ml	No hazards
Stop/Developing Solution	Liquid (contains NaOH >1%)	10 ml	See below
Sulfatase	Lyophilized	1 Vial	No hazards
4-Nitrocatechol Standard (0.5 mM)	Liquid	1.5 ml	No hazards

4-Nitrocatechol sulfate:
GHS Classification:
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure: (Category 3), Respiratory system, H335
GHS Label elements, including precautionary statements
Pictogram

Signal word: Warning
Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Sodium hydroxide:
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.
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
4-Nitrocatechol Sulfate	14528-64-4	238-550-0	311.35	$C_6H_3K_2NO_7S$
Sodium hydroxide	1310-73-2	215-185-5	40.00	NaOH

SECTION 4: FIRST AID MEASURES

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

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

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 wet brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

SECTION 7: HANDLING AND STORAGE

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

Sodium hydroxide

Components	CAS-No.	Value	Control parameters	Basis
Sodium hydroxide	1310-73-2	CEIL	2 mg/m^3	USA. ACGIH Threshold Values (TLV)
		C	2 mg/m^3	USA. OSHA – TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	2 mg/m^3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 – Limits for Air Contaminants
		C	2 mg/m^3	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Eye, skin, & upper respiratory tract irritation.			
		C	2 mg/m^3	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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	4-Nitrocatechol sulfate	Sodium hydroxide
Appearance:	No data available	Colorless liquid
pH	No data available	14.0
Water Solubility:	No data available	Soluble
Other Solubility:	No data available	No data available
Boiling Point (°C):	No data available	105-140 °C (221-284 °F)
Melting Point (°C):	No data available	-12-10 °C (10-50 °F)
Flash Point (°C):	No data available	No data available
Ignition Temp. (°C):	No data available	No data available
Density:	No data available	1.327 g/cm^3

SECTION 10: STABILITY AND REACTIVITY

Property	4-Nitrocatechol sulfate	Sodium hydroxide
Chemical Stability:	Stable under recommended storage conditions	Stable under recommended storage conditions
Conditions to Avoid:	No data available	No data available
Materials to Avoid:	Strong oxidizing agents	Water, acids, organic materials, chlorinated solvents, aluminum, phosphorus, tin/tin oxides, zinc
Hazardous decomposition products:	Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Potassium oxides	Sodium oxides

SECTION 11: TOXICOLOGICAL INFORMATION

4-Nitrocatechol sulfate:

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
Specific target organ toxicity - single exposure: Inhalation - May cause respiratory irritation.
Specific target organ toxicity - repeated exposure: No data available
Aspiration hazard: No data available
Additional Information: RTECS: Not available

Sodium hydroxide:

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

SECTION 12: ECOLOGICAL INFORMATION

Sodium hydroxide:
Persistence and degradability: no data available
Toxicity: no data available
Bio accumulative 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

Product: Observe all federal, state, and local environmental regulations.
Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

Sodium hydroxide:
DOT (US): UN-Number: 1824, Class: 8, Packing group: II; Proper shipping name: Sodium hydroxide solution; Reportable Quantity (RQ): 2857 lbs. Marine pollutant: No; 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; Marine pollutant: No
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: 4-Nitrocatechol sulfate: Acute Health Hazard; Sodium hydroxide: Acute Health Hazard; 4-Nitrocatechol: Chronic Health Hazard
Massachusetts Right To Know Components: Sodium hydroxide, CAS-No. 1310-73-2; Revision Date: 2007-03-01
Pennsylvania Right To Know Components:
4-Nitrocatechol sulfate CAS-No. 14528-64-4 Revision Date: 2007-03-01
Sodium hydroxide, CAS-No. 1310-73-2; Revision Date: 2007-03-01
4-Nitropyrocatechol CAS-No 3316-09-4 Revision Date: 2007-03-01
New Jersey Right To Know Components:
4-Nitrocatechol sulfate: CAS-No. 14528-64-4 Revision Date: 2007-03-01
Sodium hydroxide, CAS-No. 1310-73-2 Revision Date: 2007-03-01
4-Nitropyrocatechol CAS-No 3316-09-4 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

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.