

SDS DATE: May 29, 2023

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** Sample Deproteinizing Kit (PCA)  
**PRODUCT CODES:** Cat# PI-0103  
**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@akrivosbio.com](mailto:sds@akrivosbio.com)

**SECTION 2: HAZARDS IDENTIFICATION**

Component	Description	Volume	Safety Information
PCA (Perchloric Acid)	Liquid (Perchloric Acid)	20 ml	See below
Neutralization Solution	Liquid (KOH)	4 ml	See below

**Perchloric acid:**

**Emergency Overview**

**OSHA Hazards:** Oxidizer, Harmful by ingestion, Corrosive

**GHS Classification:** Oxidizing liquids (Category 1)  
Acute toxicity, Oral (Category 4)  
Skin corrosion (Category 1A)  
Serious eye damage (Category 1)

**GHS Label elements, including precautionary statements**

**Pictogram:**



**Signal word:**

Danger

**Hazard statement(s):**

H271 May cause fire or explosion; strong oxidizer.  
H302 Harmful if swallowed.  
H314 Cause severe skin burns and eye damage.

**Precautionary statement(s):**

P220 Keep/store away from clothing/combustible materials.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER or doctor/physician.

**HMIS Classification**

**Health hazard:** 3

**Flammability:** 1

**Physical hazards:** 3

**NFPA Rating**

**Health hazard:** 3

**Fire:** 1

**Reactivity Hazard:** 3

**Special Hazard:** OX

**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:** Harmful if absorbed through skin. Causes skin burns.

**Eyes:** Causes eye burns. Causes severe eye burns.

**Ingestion:** Harmful if swallowed.

**Potassium hydroxide:**

**Emergency Overview**

**OSHA Hazards:** Toxic by ingestion, Corrosive

**GHS Classification:** Acute toxicity, Oral (Category 3)  
Skin corrosion (Category 1)  
Serious eye damage (Category 1)  
Acute aquatic toxicity (Category 3)

**GHS Label elements, including precautionary statements**

**Pictogram:**



**Signal word:**

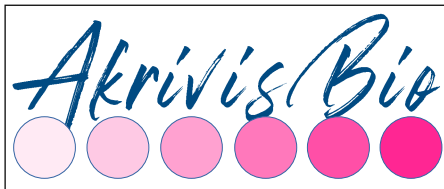
Danger

**Hazard statement(s):**

H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H402 Harmful to aquatic life.

**Precautionary statement(s):**

P234 Keep only in original container.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.



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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: 0  
**NFPA Rating**  
 Health Hazard: 3  
 Fire: 0  
 Reactivity Hazard: 0

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula
Perchloric acid	7601-90-3	--	--	--
Potassium hydroxide	1310-58-3	215-181-3	56.11	KOH

**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— see section 10.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Personal precautions:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. 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:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13). Soak up with inert absorbent material and dispose of as hazardous waste.

**SECTION 7: HANDLING AND STORAGE**

**Precautions for safe handling**  
 Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition – no smoking. Take measures to prevent the build up of electrostatic charge.  
**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: RT.

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

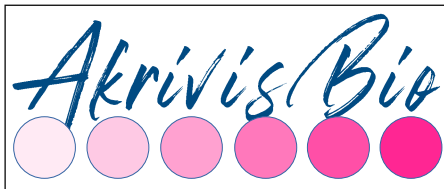
**Potassium hydroxide:**

Components	CAS-No.	Value	Control parameters	Basis
Potassium hydroxide	1310-58-3	C	2 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Eye, skin, & upper respiratory tract irritation.			
		C	2 mg/m <sup>3</sup>	USA. OSHA: TABLE Z-1 Limits for Air Contaminants – 1910.1000
		C	2 mg/m <sup>3</sup>	USA. NIOSH recommended exposure limits

**Perchloric acid:**

**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,



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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	Perchloric acid	Potassium hydroxide
<b>Appearance:</b>	Clear liquid	Beige powder
<b>pH:</b>	No data available	13.5
<b>Water Solubility:</b>	No data available	Soluble
<b>Other Solubility:</b>	No data available	No data available
<b>Boiling Point (°C):</b>	203 °C (397 °F)	1,320 °C (2,408 °F)
<b>Melting Point (°C):</b>	-18 °C (0 °F)	361 °C (682 °F)
<b>Flash Point (°C):</b>	113 °C (235 °F)	No data available
<b>Ignition Temperature (°C):</b>	No data available	No data available
<b>Density:</b>	1.664 g/ml	2.044 g/cm <sup>3</sup>

**SECTION 10: STABILITY AND REACTIVITY**

Property	Perchloric acid	Potassium hydroxide
<b>Chemical stability:</b>	Stable under recommended storage conditions	
<b>Conditions to avoid:</b>	No data available	Do not heat above melting point. Heat of solution is very high, and with limited amounts of water, violent boiling may occur.
<b>Materials to avoid:</b>	Strong bases, strong acids, amines, phosphorus halides, alcohols, organic materials, powdered metals, strong reducing agents	Nitro compounds, organic materials, magnesium, copper, water, metals, light metals. Contact with aluminum, tin, and zinc liberates hydrogen gas. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts. Vigorous reaction with alkali metals halogens, azides, anhydrides.
<b>Hazardous decomposition products:</b>	Hydrogen chloride gas	Potassium oxides

**SECTION 11: TOXICOLOGICAL INFORMATION**

**Perchloric acid:**

**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 by 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 known or anticipated 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.

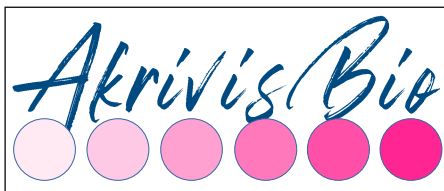
**Reproductive toxicity:** no data available

**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**



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

**Skin:** Harmful if absorbed through skin. Causes skin burns.

**Eyes:** Causes eye burns. Causes severe eye burns.

**Ingestion:** Harmful if swallowed.

**Signs and Symptoms of Exposure:** Exposure may cause 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 to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

**Synergistic effects:** no data available

**Additional information:** RTECS: not available

**Potassium hydroxide:**

**Acute toxicity:** LD50 Oral – rat – 273 mg/kg

**Skin corrosion/irritation:** Skin – rabbit – severe skin irritation – 24 h

**Serious eye damage/eye irritation:** Eyes- rabbit – eye irritation – 24 h

**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 by 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 known or anticipated 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

**Signs and Symptoms of Exposure:** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects:** no data available

**Additional information:** RTECS: TT2100000

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**SECTION 12: ECOLOGICAL INFORMATION**

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**Potassium hydroxide:**

**Persistence and degradability:** no data available

**Toxicity:** Toxicity to fish: LC50 – Gambusia affinis (Mosquito fish) – 80 mg/l – 96 h

**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.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**Product:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

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

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**SECTION 14: TRANSPORT INFORMATION**

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**Perchloric acid:**

**DOT (US):** UN-number: 1873, Class: 5.1 (8), Packing group: I; Proper shipping name: Perchloric acid; Marine pollutant: No; Poison inhalation hazard: No

**IMDG:** UN-number: 1873, Class: 5.1 (8), Packing group: I; EMS-No: F-G, S-Q; Proper shipping name: PERCHLORIC ACID; Marine pollutant: No

**IATA:** UN-number: 1873, Class: 5.1 (8), Packing group: I; Proper shipping name: Perchloric acid; IATA Passenger: Not permitted for transport

**Potassium hydroxide:**

**DOT (US):** UN number: 1814 Class: 8 Packing group: II

Proper shipping name: Potassium hydroxide, solution

Reportable Quantity (RQ): 3448 lbs

**IMDG:** UN number: 1814 Class: 8 Packing group: II EMS-No: F-A, S-B

Proper shipping name: POTASSIUM HYDROXIDE SOLUTION

**IATA:** UN number: 1814 Class: 8 Packing group: II

Proper shipping name: Potassium hydroxide solution

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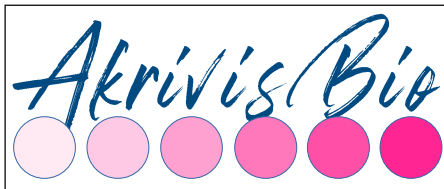
**SECTION 15: REGULATORY INFORMATION**

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**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 II, Section 313.

**SARA 311/312 Hazards:**



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Perchloric acid: Reactivity Hazard, Acute Health Hazard

Potassium hydroxide: Acute Health Hazard

**Massachusetts Right To Know Components:**

Perchloric acid, CAS-No. 7601-90-3; Revision Date: 1993-04-24

Potassium hydroxide, CAS-No. 1310-58-3; Revision Date: 2007-03-01

**Pennsylvania Right To Know Components:**

Perchloric acid, CAS-No. 7601-90-3; Revision Date: 1993-04-24

Potassium hydroxide, CAS-No. 1310-58-3; Revision Date: 2007-03-01

**New Jersey Right To Know Components:**

Perchloric acid, CAS-No. 7601-90-3; Revision Date: 1993-04-24

Potassium hydroxide, CAS-No. 1310-58-3; 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
Perchloric acid	R5, R8, R35	S23, S26, S36, S45
Potassium hydroxide	R22, R35	S26, S36/37/39, S45

**SECTION 16: OTHER 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.