

SDS DATE: May 29, 2023

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Deproteinizing Sample Kit (TCA)
PRODUCT CODES: Cat# PI-0102
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

SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
Trichloroacetic acid Solution	Liquid (trichloroacetic acid: >1%)	3 ml	See below
Neutralization Solution	Liquid (potassium hydroxide: >1%)	4 ml	See below

Trichloroacetic Acid:**Emergency Overview**

Other hazards which do not result in classification: Vesicant

GHS Classification: Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318
Carcinogenicity (Category 2), H351
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

GHS Label elements, including precautionary statements**Pictogram:****Signal word:**

Danger

Hazard statement(s):

H314 Causes severe skin burns and eye damage.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
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.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant..

HMIS Classification

Health hazard: 3

Chronic health hazard: *

Flammability: 0

Physical hazards: 0

NFPA Rating

Health Hazard: 3

Fire: 0

Reactivity Hazard: 0

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)

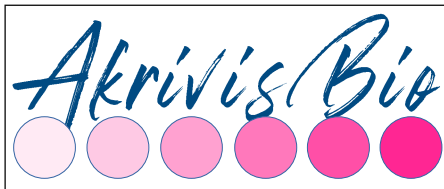
GHS Label elements, including precautionary statements**Pictogram:****Signal word:**

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.



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- 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.
- 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
Trichloroacetic acid	76-03-9	200-927-2	163.39	C ₂ HCl ₃ O ₂
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 buildup 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.

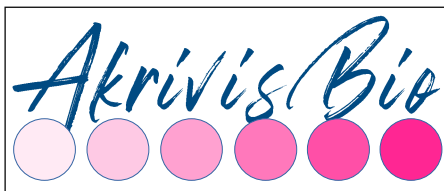
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Trichloroacetic Acid:

Components	CAS-No.	Value	Control parameters	Basis
Trichloroacetic acid	76-03-9	TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Eye & upper respiratory tract irritation. Confirmed animal carcinogen with unknown relevance to humans.			
		TWA	1 ppm 7 mg/m ³	USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000
		TWA	1 ppm 7 mg/m ³	USA. NIOSH recommended exposure limits

Potassium hydroxide:

Components	CAS-No.	Value	Control parameters	Basis
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Potassium hydroxide	1310-58-3	C	2 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Eye, skin, & upper respiratory tract irritation.			
		C	2 mg/m ³	USA. OSHA: TABLE Z-1 Limits for Air Contaminants – 1910.1000
		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	TCA	Potassium hydroxide
Appearance:	Liquid	Liquid
pH:	1 at 81.7 g/l at 25 °C (77 °F)	13.5
Water Solubility:	Completely soluble	Soluble
Other Solubility:	No data available	No data available
Boiling Point (°C):	196 °C (385 °F)	1,320 °C (2,408 °F)
Melting Point (°C):	54-58 °C (129-136 °F)	361 °C (682 °F)
Flash Point (°C):	>113 °C (>235 °F)	No data available
Ignition Temperature (°C):	No data available	No data available
Density:	1.62 g/cm ³ at 25 °C (77 °F)	2.044 g/cm ³

SECTION 10: STABILITY AND REACTIVITY

Property	Potassium hydroxide	TCA
Chemical stability:	Stable under recommended storage conditions	
Conditions to avoid:	Do not heat above melting point. Heat of solution is very high, and with limited amounts of water, violent boiling may occur.	Exposure to moisture. Heat.
Materials to avoid:	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.	Strong oxidizing agents, strong bases, amines
Hazardous decomposition products:	Potassium oxides	Carbon oxides, hydrogen chloride gas

SECTION 11: TOXICOLOGICAL INFORMATION

Trichloroacetic Acid:

Acute toxicity: LD50 Oral – rat – 3,320 mg/kg

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: Eyes – rabbit – severe eye irritation – 5 s

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Trichloroacetic acid)

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.

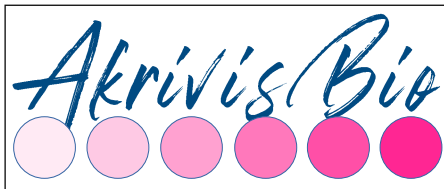
Reproductive toxicity: no data available

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: 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.



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Additional information: RTECS: AJ7875000

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

SECTION 12: ECOLOGICAL INFORMATION

Trichloroacetic Acid:

Persistence and degradability: Biodegradability (Zahn-Wellens Test)→ Result: 5% - not readily biodegradable

Toxicity: Toxicity to fish→ LC50 – Pimephales promelas (fathead minnow) – 2,000 mg/l – 96 h

Toxicity to daphnia and other aquatic invertebrates→ EC50 – Daphnia magna (Water flea) – 1,460-2,000 mg/l – 48 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. Very toxic to aquatic life with long lasting effects.

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.

SECTION 13: DISPOSAL CONSIDERATIONS

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.

SECTION 14: TRANSPORT INFORMATION

Trichloroacetic Acid:

DOT (US): Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

Potassium hydroxide:

DOT (US): Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

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 II, Section 313.

SARA 311/312 Hazards:

Trichloroacetic Acid: Acute Health Hazard, Chronic Health Hazard

Potassium hydroxide: Acute Health Hazard

Massachusetts Right To Know Components:

Trichloroacetic Acid, CAS-No. 76-03-9; Revision Date: 2007-03-1

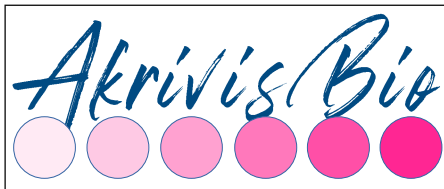
Potassium hydroxide, CAS-No. 1310-58-3; Revision Date: 2007-03-01

Pennsylvania Right To Know Components:

Trichloroacetic Acid, CAS-No. 76-03-9; Revision Date: 2007-03-1

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

New Jersey Right To Know Components:



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Trichloroacetic Acid, CAS-No. 76-03-9; Revision Date: 2007-03-1

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

California Prop. 65 Components: ⚠ WARNING! This product contains a chemical known to the State of California to cause cancer.

Trichloroacetic Acid, CAS-No. 76-03-9, Revision Date: 2007-03-1

EU regulations

Component	Risk Phrases	Safety Phrases
Trichloroacetic Acid	R35, R50/53	S26, S36/37/39, S45, S60, S61
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.