

SAFETY DATA SHEET

Cat# K992-100 5' Nucleotidase Assay Kit

SDS DATE: April 15 2020

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 5' Nucleotidase Assay Kit

PRODUCT CODES: Cat# K992-100

RESTRICTIONS ON USE: For laboratory research purposes. Not for drug or household use.

MANUFACTURER: BioVision, Inc.
ADDRESS: 155 S. Milpitas Boulevard, Milpitas, CA 95035

EMERGENCY PHONE: 858-373-8066
CHEMTREC PHONE:
OTHER CALLS: 408-493-1800
FAX PHONE: 408-493-1801

SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
5'-NT Assay Buffer	Liquid	25 ml	No hazards
5'-NT Substrate	--	1 vial	No hazards
5'-NT Convertor	--	1 vial	No hazards
5'-NT Inhibitor	Contains proprietary inhibitor	250 µl	See below
5'-NT Stop Solution	Liquid	500 µl	No hazards
5'-NT Developer I	Contains proprietary reagent A	8 ml	See below
5'-NT Developer II	Contains proprietary reagent B	4 ml	See below
NH ₄ ⁺ Standard (100 mM)	Liquid	100 µl	No hazards
5'-NT Positive Control	--	1 vial	No hazards

Proprietary inhibitor:
Emergency Overview

OSHA Hazards:

Target Organs:

GHS Classification:

GHS Label elements, including precautionary statements

Pictogram:



Signal word:

Hazard statement(s):

Danger
H301 + H331 Toxic if swallowed or if inhaled
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
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.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

HMIS Classification

Health hazard: 2

Chronic Health Hazard: *

Flammability: 0

SAFETY DATA SHEET

Cat# K992-100 5' Nucleotidase Assay Kit

SDS DATE: April 15 2020

Physical hazards: 0
NFPA Rating
Health hazard: 2
Fire: 0
Reactivity Hazard: 0

Proprietary Reagent A:

Emergency Overview

GHS Classification: Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 1), H400

GHS Label elements, including precautionary statements



Pictogram:

Signal word:

Hazard statement(s):

Warning
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.

Precautionary statement(s):

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
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 cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.
P321 Specific treatment (see supplemental first aid instructions on this label).
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.
P391 Collect spillage.
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.

HMIS Classification

Health hazard: 2
Chronic health hazard: *
Flammability: 1
Physical hazards: 0

NFPA Rating

Health Hazard: 2
Fire: 1
Reactivity Hazard: 0

PROPRIETARY REAGENT B:

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

GHS Label elements, including precautionary statements

Pictogram:



Signal word:

Hazard statement(s):

Danger
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

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.

SAFETY DATA SHEET

Cat# K992-100 5' Nucleotidase Assay Kit

SDS DATE: April 15 2020

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
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

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula
Proprietary inhibitor	--	--	--	--
Proprietary Reagent A	--	--	--	--
PROPRIETARY REAGENT B	--	--	--	--

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

Proprietary Reagent B:

Suitable extinguishing media: Dry powder.

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— Hydrogen chloride gas, Sodium oxides.

Further information: Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up: 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.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. 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: -20°C

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

PROPRIETARY REAGENT B

Components	CAS-No.	Value	Control parameters	Basis
PROPRIETARY REAGENT B	--	STEL	2.000000 mg/m ³	USA. Workplace Environmental Exposure Levels (WEEL)

SAFETY DATA SHEET

Cat# K992-100 5' Nucleotidase Assay Kit

SDS DATE: April 15 2020

Proprietary Reagent A and Proprietary inhibitor:

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	Proprietary Reagent A	PROPRIETARY REAGENT B	Proprietary inhibitor
Appearance:	Clear liquid	Liquid	powder
pH:	No data available	No data available	No data available
Water Solubility:	No data available	No data available	No data available
Other Solubility:	No data available	No data available	No data available
Boiling Point (°C):	No data available	No data available	No data available
Melting Point (°C):	No data available	No data available	No data available
Flash Point (°C):	No data available	No data available	No data available
Ignition Temperature (°C):	No data available	No data available	No data available
Density:	No data available	No data available	no data available

SECTION 10: STABILITY AND REACTIVITY

Property	Proprietary inhibitor	Proprietary Reagent A	PROPRIETARY REAGENT B
Chemical stability:	Stable under recommended storage conditions		
Conditions to avoid:	no data available	no data available	No data available
Materials to avoid:	Strong oxidizing agents, Strong bases	Strong oxidizing agents, Strong bases	Strong acids, Organic materials, Powdered metals, Forms shock-sensitive mixtures with certain other materials., Amines, Reacts violently with ammonium salts, aziridine, methanol, and phenylacetoneitrile.
Hazardous decomposition products:	no data available	no data available	No data available

SECTION 11: TOXICOLOGICAL INFORMATION

Proprietary inhibitor:

Acute toxicity

LD50 Oral - Rat - 186 mg/kg

Carcinogenicity

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or

EPA classification.

Human carcinogen.

IARC: 1 - Group 1: Carcinogenic to humans (Nickel(II) chloride)

NTP: Known to be human carcinogen (Nickel(II) chloride)

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

Presumed human reproductive toxicant

Additional Information

RTECS: no data available

Proprietary Reagent A:

Acute toxicity: LD50 Oral - rat - 2,733 mg/kg

Inhalation: no data available

LD50 Intraperitoneal - mouse - 50 mg/kg

SAFETY DATA SHEET

Cat# K992-100 5' Nucleotidase Assay Kit

SDS DATE: April 15 2020

Skin corrosion/irritation: Skin – rabbit – irritating to skin

Serious eye damage/eye irritation: Eyes – rabbit – Severe eye irritation

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: 2B - Group 2B: Possibly carcinogenic to humans

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): May cause respiratory irritation

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

Aspiration hazard: no data available

Signs and Symptoms of Exposure: Exposure may cause central nervous system depression, narcosis, and/or damage to the heart. 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: no data available

PROPRIETARY REAGENT B:

Acute toxicity: No data available

Inhalation: No data available

Dermal: No data available

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: A4 - Not classifiable as a human carcinogen

3 - Group 3: Not classifiable as to its carcinogenicity to humans

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 abdominal pain, nausea, headache, sneezing, and/or vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information: RTECS: --

SECTION 12: ECOLOGICAL INFORMATION

Proprietary Reagent A:

Persistence and degradability: Biodegradability Result: 70.8 - 75.7 % - Readily biodegradable.

Toxicity: Toxicity to fish LC50 - Danio rerio (zebra fish) - 4.5 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates LC50 - Daphnia magna (Water flea) - 2.7 mg/l - 48 h

Toxicity to algae EC50 - Algae - 0.85 mg/l - 72 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 with long lasting effects.

No data available

PROPRIETARY REAGENT B:

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.

Very toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

Cat# K992-100 5' Nucleotidase Assay Kit

SDS DATE: April 15 2020

Proprietary inhibitor

Toxicity to fish: mortality NOEC - Oncorhynchus mykiss (rainbow trout) - 4.9 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 6.0 - 9.3 mg/l - 48 h

Toxicity to algae EC50 - Pseudokirchneriella subcapitata (green algae) - 0.006 - 0.012 mg/l - 96h

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

Proprietary Reagent A:

DOT (US): Not dangerous goods

IMDG: UN-number: 3077, Class: 9, Packing group: II; EMS-No: F-E, S-D; Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.; Marine pollutant: Marine pollutant

IATA: UN number: 3077 Class: 9 Packing group: III; Proper shipping name: Environmentally hazardous substance, solid, n.o.s.

PROPRIETARY REAGENT B:

DOT (US): UN number: 1791 Class: 8 Packing group: III; Proper shipping name: Hypochlorite solutions; Reportable Quantity (RQ): 667 lbs
Poison Inhalation Hazard: No

IMDG: UN number: 1791 Class: 8 Packing group: III EMS-No: F-A, S-B; Proper shipping name: HYPOCHLORITE SOLUTION; Marine pollutant: yes

IATA: UN number: 1791 Class: 8 Packing group: III; Proper shipping name: Hypochlorite solution

Proprietary inhibitor:

DOT (US)

UN number: 3288 Class: 6.1 Packing group: III

Proper shipping name: Toxic solid, inorganic, n.o.s.

Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 3288 Class: 6.1 Packing group: III EMS-No: F-A, S-A

Proper shipping name: TOXIC SOLID, INORGANIC, N.O.S.

Marine pollutant: yes

IATA

UN number: 3288 Class: 6.1 Packing group: III

Proper shipping name: Toxic solid, inorganic, n.o.s.

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: The following components are subject to reporting levels established by SARA Title III, Section 313:

Proprietary Reagent A: CAS-No. --

Proprietary inhibitor: CAS-No. --

SARA 311/312 Hazards:

Proprietary Reagent A & PROPRIETARY REAGENT B: Acute Health Hazard

Massachusetts Right To Know Components:

Proprietary inhibitor: CAS-No. --

Proprietary Reagent A, CAS-No. --

Proprietary Reagent B, CAS-No. --

Pennsylvania Right To Know Components:

Proprietary inhibitor: CAS-No. --

Proprietary Reagent A, CAS-No. --


PROPRIETARY REAGENT B, CAS-No. --

New Jersey Right To Know Components:

Proprietary inhibitor: CAS-No. --

Proprietary Reagent A, CAS-No. --

PROPRIETARY REAGENT B, CAS-No. --

California Prop. 65 Components:  WARNING: This product can expose you to chemicals including Nickel Chloride, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

EU regulations

Component	Risk Phrases	Safety Phrases
Proprietary inhibitor	--	--
Proprietary Reagent A	--	--
PROPRIETARY REAGENT B	--	--

SAFETY DATA SHEET

Cat# K992-100 5' Nucleotidase Assay Kit

SDS DATE: April 15 2020

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. BioVision, Inc., shall not be held liable for any damage resulting fro