
1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Protease/Phosphatase Inhibitor Cocktail (100X)
Product Number 5872
Identified Uses For Research Use Only (RUO). Not intended for use in humans or animals.
Not intended for therapeutic or diagnostic procedures.

Manufacturer/Supplier Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923 USA

Phone #: 1-978-867-2300
Emergency Tel# 1-978-578-6737

2. HAZARDS IDENTIFICATION

Emergency Overview

Warning!

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Harmful if inhaled or swallowed.

Causes respiratory tract, eye, and skin irritation.

May be harmful if absorbed through skin.

Contains material that can cause target organ damage.

Suspect cancer hazard – contains material which may cause cancer.

Physical State

Liquid

Routes of Entry: Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Health Effects

Acute Toxicity

Eyes	Irritating to eyes.
Skin	Harmful if contact with skin
Inhalation	Toxic if inhaled. Irritating to respiratory system.
Ingestion	Toxic if swallowed

Chronic Effects

Carcinogenic effects	Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenic effects	No known significant effects or critical hazards.
Teratogenic effects	No known significant effects or critical hazards.
Reproductive toxicity	No known significant effects or critical hazards.
Sensitization	No information available

Target organ effects

Contains material which causes damage to the following organs: Heart. Teeth.
Contains material which causes damage to the following organs: Kidneys, gastrointestinal tract, upper respiratory tract, skin, bones, central nervous system (CNS), eye, lens, or cornea.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients

Chemical Name	CAS No.	Concentration
Disodium beta-glycerophosphate	819-83-0	3-5%
Disodium dihydrogenpyrophosphate	7758-16-9	1-3%
Sodium fluoride	7681-49-4	1-3%
Trisodium tetraoxovanadate	13721-39-6	1-3%
Tyrsin inhibitor, pancreatic basic	9087-70-1	0.1-1%

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water. Get medical attention.
Skin Contact	Rinse immediately with soap and plenty of water. Get medical attention.
Inhalation	Move to fresh air. Get medical attention.
Ingestion	Call Poison Control Center immediately. Never give anything by mouth to an unconscious person. Rinse mouth with water.
Notes to physician	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point	See Section 9. Physical and Chemical Properties
Suitable Extinguishing Media	Use dry chemical
Special exposure hazards	No data available
Special protection for fire fighters	Wear appropriate self-contained breathing apparatus and protective unit
Other information	No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Do not touch or walk through spilled material. Wear personal protective equipment
Environmental precautions	Do not let product enter drains.
Clean up methods	Soak up with absorbent material. Keep in suitable closed containers for disposal.
Other information	See sections 12 and 13 for additional information.

7. HANDLING AND STORAGE

Safe handling advice	Avoid contact with eyes and skin. Ensure adequate ventilation.
Storage conditions	Keep container tightly closed in a cool dry location.
Incompatibilities	No data available
Specific end uses	No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits Ingredients with workplace control parameters

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Z2)	ACGIH OEL (TLV)	NIOSH REL
Sodium fluoride	2.5 mg/m ³ 8hours. (as F)	2.5 mg/m ³ 8hours. Form: Dust	2.5 mg/m ³ 8hours. (as F)	2.5 mg/m ³ 10 hours. (as F)

Exposure Controls

Apply technical measures to comply with the occupational exposure limits.

Engineering Controls

Emergency eyewash and safety shower. Mechanical exhaust required.

Hygiene Measures

Do not eat, drink or smoke when handling product. Wash hands thoroughly after handling product. Wash contaminated clothing before reuse.

Personal Protective Equipment

Respiratory Protection:	In case of insufficient ventilation wear suitable respiratory equipment.
Eye Protection:	Safety glasses with side shields
Skin and body protection:	Wear suitable protective clothing, protective shoes or boots.
Hand protection:	Compatible chemical resistant gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	liquid
Appearance	no data available
Odor	odorless
pH	no data available
Water Solubility	Soluble
Melting point/freezing point	no data available
Boiling point	no data available
Evaporation rate	no data available
Flash point	no data available
Autoignition temperature	no data available
Flammability limits in air	no data available
Explosive properties	no data available
VOC content	no data available
Decomposition temperature	no data available

10. STABILITY AND REACTIVITY

Stability	stable under normal conditions
Conditions/Materials to avoid	no data available
Hazardous decomposition products	no data available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated.

Routes of Exposure**Potential Health Effects**

Acute Toxicity

Eyes	Risk of serious damage to eyes
Skin	Toxic in contact with skin
Inhalation	Toxic by inhalation
Ingestion	Toxic if swallowed

Ingredient Name	Result	Species	Dose
Disodium dihydrogenpyrophosphate	LC50 Inhalation Dust and Mist	Rat	>0.58mg/L
Sodium fluoride	LD50 Oral	Rat	1800 mg/kg
	LD50 Oral	Rat	31 mg/kg
	Eyes Moderate Irritant	Rabbit	
Trisodium tetraoxovanadate	LD50 Oral	Rat	330/mg/kg

Chronic Effects

Carcinogenic effects	Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenic effects	No known significant effects or critical hazards.
Teratogenic effects	No known significant effects or critical hazards.
Reproductive toxicity	No known significant effects or critical hazards.
Sensitization	No information available

Ingredient Name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Sodium fluoride	A4	3	C	-	Possible	-
Trisodium tetraoxovanadate	-	-	-	None	-	None

Target organ effects

Contains material which causes damage to the following organs: Heart. Teeth.
 Contains material which causes damage to the following organs: Kidneys, gastrointestinal tract, upper respiratory tract, skin, bones, central nervous system (CNS), eye, lens, or cornea.

12. ECOLOGICAL INFORMATION

Ecotoxicity	The environmental impact of this product has not been fully investigated. No known significant effects or critical hazards.
Persistence and degradability	Not available
Bioaccumulation	Not available
Mobility	Not available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Dispose of in accordance with all applicable environmental laws and regulations.
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14. TRANSPORT INFORMATION

IATA	Not regulated as dangerous goods
DOT	Not regulated as dangerous goods

MEX

Not regulated as dangerous goods

15. REGULATORY INFORMATION

HCS Classification

Toxic material
Irritating material
Carcinogen
Target Organ Effects

International Inventories

TSCA (8a) PAIR Trisodium tetraoxovanadate
EINECS/ELINCS -
ENCS -
IECSC -
KECL -
PICCS -
AICS -
NZIoC -

U.S. Federal Regulations

SARA 302/304/311/312 extremely hazardous products: No products were found.
SARA 302/304/311/312 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Sodium fluoride. Trisodium tetraoxovanadate
SARA 311/312 MSDS Distribution:
Sodium fluoride: Immediate (acute) health hazard, Delayed (chronic) health hazard.
Trisodium tetraoxovanadate: Delayed (chronic) health hazard.
Commerce Control List precursor: Sodium fluoride

Clean Water Act

This product the following components are listed as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42): Sodium fluoride.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990.

U.S. State Regulations

Massachusetts The following components are listed: Sodium fluoride.
New York The following components are listed: Sodium fluoride.
New Jersey The following components are listed: Sodium fluoride.
Pennsylvania The following components are listed: Sodium fluoride.
U.S. Inventory (TSCA 8b) At least one component is listed.

Canada**WHMIS Hazard Class**

D1B Toxic. Material causing immediate and serious toxic effects.
D2A Very toxic. Materials causing other toxic effects.
D2B Toxic. Materials causing other toxic effects.

Canadian NPRI

The following components are listed: Sodium fluoride. Vanadium.

CEPA Toxic Substances The following components are listed: Inorganic fluorides.
Canada Inventory At least one component is listed.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

Revision date 2012-05-22
Revision Note ***Indicates updated section

Disclaimer

The information provided on this material safety data sheet is to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Material Safety Data Sheet