Safety Data Sheet (SDS) According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Issuing Date: 2018-01-19 **Version:** 1

SECTION 1. Identification

Product identifier

Product No	7872
Product name	PathScan® Total Chk1 Sandwich ELISA Kit
Kit Component	**Green Detection Antibody** ***Red HRP-Linked Antibody** **TMB Substrate** **STOP Solution** **ELISA Wash Buffer (20X)** **ELISA Sample Diluent** **Cell Lysis Buffer (10X)**
	***Note: Some PathScan® ELISA Kits may include HRP-Linked Streptavidin in place of HRP-Linked Antibody.**
UN number	UN3265 (maleic acid)

Recommended use of the chemical and restrictions on use

Identified uses	This product is intended for research purposes only.

Manufacturer, importer, supplier

Manufacturer address	Cell Signaling Technology, Inc. 3 Trask Lane Danvers, MA 01923 United States TEL: +1 978 867 2300 FAX: +1 978 867 2400
Website	www.cellsignal.com
Email address	support@cellsignal.com
Emergency telephone number	In case of emergency call CHEMTREC 1-800-424-9300

SECTION 2. Hazard(s) identification

Classification

Classification and label elements described below are inclusive of all hazards of the combined kit. The most severe classifications are listed for each endpoint. Refer to individual kit component SDS for classification and label elements for each component present in the kit. This substance/mixture is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1

GHS Label elements, including precautionary statements

Signal Word
Danger

Hazard statement(s)
Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction.

Precautionary Statement(s)
Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Avoid contact during pregnancy/while nursing. Do not eat, drink or smoke when using this product.
Immediately call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice/attention.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
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.
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.
Dispose of contents/container to an approved waste disposal plant.

Supplementary Hazard Information

May produce an allergic reaction
Hazards not otherwise classified (HNOC)
Harmful to aquatic life with long lasting effects.

SECTION 3. Composition/information on ingredients

Kit Component Name Green Detection Antibody

Chemical Name	CAS No	Weight %
sodium azide	26628-22-8	<0.1

Kit Component Name *Red HRP-Linked Antibody

Chemical Name	CAS No	Weight %
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1)	55965-84-9	0.005-0.025
trometamol	77-86-1	0.5

Kit Component Name STOP Solution

Chemical Name	CAS No	Weight %
maleic acid	110-16-7	3-7

Kit Component Name ELISA Wash Buffer (20X)

Chemical Name	CAS No	Weight %
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC	55965-84-9	0.005-0.025

no. 220-239-6] (3:1)		

Kit Component Name ELISA Sample Diluent

Chemical Name	CAS No	Weight %
sodium azide	26628-22-8	<0.1

Kit Component Name Cell Lysis Buffer (10X)

Chemical Name	CAS No	Weight %
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	9002-93-1	10
trometamol	77-86-1	1.79
tetrasodium pyrophosphate, decahydrate	13472-36-1	0.1-1

Kit Component Name TMB Substrate

This product does not contain substances at concentrations requiring disclosure under 29 CFR 1910.1200 (OSHA Hazard Communication Standard).

SECTION 4. First-aid measures

Eye contact Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Immediate medical attention is required.

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur. If breathing is difficult, give oxygen.

Ingestion Get medical attention. Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Contains kit components which may cause the following effects, refer to individual component SDSs for full information on symptoms:
Corrosive. Significant esophageal or gastrointestinal tract irritation or burns may occur following ingestion. Liquid, aerosols and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes. Respiratory tract irritation, if severe, can progress to pulmonary edema which may be delayed in onset up to 24 to 72 hours after exposure in some cases. May cause an allergic skin reaction including itching, redness, and rash.

Indication of any immediate medical attention and special treatment needed

Probable mucosal damage may contraindicate the use of gastric lavage.

Advice for emergency responders

General advice For further assistance, contact your local Poison Control Center.

Protection of first-aiders Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion Data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Avoid contact with skin, eyes and clothing. Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Do not allow material to contaminate ground water system. Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.
Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal. Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

SECTION 7. Handling and storage

Precautions for safe handling

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation at machinery.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep away from direct sunlight.
Packaging material No information available.
Incompatible products Incompatible with strong acids and bases. Incompatible with oxidizing agents.

SECTION 8. Exposure controls/personal protection

Control parameters

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL
tetrasodium pyrophosphate, decahydrate	-	-	TWA : 5 mg/m^3
sodium azide	Ceiling: 0.29 mg/m^3 Ceiling: 0.11 ppm	-	Ceiling: 0.1 ppm Ceiling: 0.3 mg/m^3

Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

Individual protection measures, such as personal protective equipment

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

Eye/face protection	Tightly fitting safety goggles. Face-shield.
Skin and body protection	Wear protective gloves/clothing.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene measures	Remove and wash contaminated clothing before re-use. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Keep away from food, drink and animal feeding stuffs. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection.

SECTION 9. Physical and chemical properties

Information on the known physical chemical properties of each component within Kit are given below. If not included, information is either not available or not applicable. Refer to individual kit component SDS for further information.

Information on basic physical and chemical properties

Kit Component	**Green Detection Antibody**
Physical state	Liquid
Appearance	Clear
Color	Green
pH VALUE	7.4
Remarks	@ 20 °C

Kit Component	***Red HRP-Linked Antibody**
Physical state	Liquid
Appearance	Clear
Color	Red
pH VALUE	7.4
Remarks	@ 20 °C

Kit Component	**TMB Substrate**
Physical state	Liquid
Appearance	Clear
Color	Light yellow
pH VALUE	3.3-3.8
Remarks	@ 20 °C

Kit Component	**STOP Solution**
Physical state	Liquid
Appearance	Clear
Color	Colorless
pH VALUE	1.2
Remarks	@ 20 °C

Kit Component	**ELISA Wash Buffer (20X)**
Physical state	Liquid
Appearance	Clear
Color	Colorless
pH VALUE	6.4
Remarks	@ 20 °C

Kit Component	**ELISA Sample Diluent**
Physical state	Liquid
Appearance	Clear
Color	Blue

pH VALUE	7.1
Remarks	@ 20 °C

Kit Component	**Cell Lysis Buffer (10X)**
Physical state	Liquid
Color	Colorless
pH VALUE	7.5
Remarks	@ 20 °C

SECTION 10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Hazardous reactions	None under normal processing.
Hazardous polymerization	None under normal processing.

Conditions to Avoid

Extremes of temperature and direct sunlight. Over a period of time, sodium azide may react with copper, lead, brass, or solder in plumbing systems to form an accumulation of the HIGHLY EXPLOSIVE compounds of lead azide & copper azide.

Incompatible Materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

SECTION 11. Toxicological information

Information on likely routes of exposure

Product Information
Refer to kit component SDS for full toxicological information. This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

Inhalation

Kit Component	STOP Solution
Inhalation	Aerosol expected to be irritating based on components

Kit Component	ELISA Wash Buffer (20X)
Inhalation	Avoid breathing vapors or mists May cause irritation of respiratory tract

Kit Component	*Red HRP-Linked Antibody
Inhalation	Avoid breathing vapors or mists May cause irritation of respiratory tract

Eye contact

Kit Component	STOP Solution
Eye contact	May cause irreversible damage to eyes
Kit Component	ELISA Wash Buffer (20X)
Eye contact	Expected to be an irritant based on components
Kit Component	Cell Lysis Buffer (10X)
Eye contact	Expected to be an irritant based on components
Kit Component	*Red HRP-Linked Antibody
Eye contact	Contact with eyes may cause irritation

Skin contact

Kit Component	STOP Solution
Skin contact	Corrosive to skin. Prolonged contact with skin is harmful
Kit Component	ELISA Wash Buffer (20X)
Skin contact	Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Expected to be an irritant based on components
Kit Component	*Red HRP-Linked Antibody
Skin contact	Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

Ingestion

Kit Component	STOP Solution
Ingestion	Ingestion causes burns of the upper digestive and respiratory tract. Harmful if swallowed
Kit Component	ELISA Wash Buffer (20X)
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea

Information on toxicological effects

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	= 1800 mg/kg (Rat)	-	-
maleic acid	708 mg/kg (Rat)	1,560 mg/kg (Rabbit)	> 0.72 mg/L (Rat) 1h
trometamol	5900 mg/kg (Rat)	-	-
sodium azide	= 27 mg/kg (Rat)	= 20 mg/kg (Rabbit) = 50 mg/kg (Rat)	-
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1)	= 53 mg/kg (Rat) = 481 mg/kg (Rat)	-	= 1.23 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Symptoms

Contains kit components which may cause the following effects, refer to individual component SDSs for full information on symptoms:
Corrosive. Significant esophageal or gastrointestinal tract irritation or burns may occur following ingestion Liquid, aerosols and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes. Respiratory tract irritation, if severe, can progress to pulmonary edema which may be delayed in onset up to 24 to 72 hours after exposure in

some cases May cause an allergic skin reaction including itching, redness, and rash.

Skin and Eye Corrosion/Irritation

Kit Component	STOP Solution
Skin corrosion/irritation	Causes burns
Serious eye damage/eye irritation	Risk of serious damage to eyes

Kit Component	ELISA Wash Buffer (20X)
Skin corrosion/irritation	Causes skin irritation
Serious eye damage/eye irritation	Causes serious eye irritation

Kit Component	Cell Lysis Buffer (10X)
Serious eye damage/eye irritation	Irritating to eyes

Sensitization

Kit Component	STOP Solution
Skin Sensitization	May cause skin sensitization

Kit Component	ELISA Wash Buffer (20X)
Skin Sensitization	Product is or contains a sensitizer. May cause skin sensitization

Kit Component	*Red HRP-Linked Antibody
Skin Sensitization	Product is or contains a sensitizer. May cause an allergic skin reaction.

Mutagenic effects

Kit Component	STOP Solution
Mutagenic effects	Not mutagenic in AMES Test

Carcinogenicity No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible or confirmed carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity No information available.

Systemic Target Organ Toxicity (STOT)

Kit Component	STOP Solution
STOT - single exposure	Respiratory system

Aspiration Hazard No information available.

SECTION 12. Ecological information

Ecotoxicity

Product Information

Kit Component	STOP Solution
Ecotoxicity	Toxic to aquatic life

Kit Component	ELISA Wash Buffer (20X)
Ecotoxicity	Harmful to aquatic life with long lasting effects

Component Information

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	-	LC50 8.9 mg/l (Pimephales promelas) 96 h	EC50 26 mg/l (Daphnia) 48 h
maleic acid	-	LC50 5 mg/L (Pimephales promelas) 96 h	EC50 250 - 400 mg/L (Daphnia magna) 48 h
trometamol	-	-	NOEC >100 mg/L (Selenastrum capricornutum) 96 h
sodium azide	EC50 0.35 mg/L (Pseudokirchneriella subcapitata) 96 h	LC50 0.8 mg/L (Oncorhynchus mykiss) 96 h LC50 5.46 mg/L (Pimephales promelas) 96 h LC50 0.7 mg/L (Lepomis macrochirus) 96 h	LC100 1 mg/L (Orconectes rusticus) 96 h
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1)	EC50 0.11 - 0.16 mg/L (Pseudokirchneriella subcapitata) 72 h EC50 0.31 mg/L (Anabaena flos-aquae) 120 h EC50 0.03 - 0.13 mg/L (Pseudokirchneriella subcapitata) 96 h	LC50 1.6 mg/L (Oncorhynchus mykiss) 96 h	EC50 4.71 mg/L (Daphnia magna) 48 h EC50 0.71 - 0.99 mg/L (Daphnia magna) 48 h EC50 0.12 - 0.3 mg/L (Daphnia magna) 48 h

Persistence and degradability

Kit Component	STOP Solution
Persistence and degradability	Product is biodegradable
Kit Component	ELISA Wash Buffer (20X)
Persistence and degradability	Not readily biodegradable

Bioaccumulation

Kit Component	STOP Solution
Bioaccumulation	Not likely to bioaccumulate
Kit Component	ELISA Wash Buffer (20X)
Bioaccumulation	Not likely to bioaccumulate

Chemical Name	Octanol-Water Partition Coefficient
maleic acid	0.32

Mobility

Kit Component	STOP Solution
Mobility	Will likely be mobile in the environment due to its water solubility
Kit Component	ELISA Wash Buffer (20X)
Mobility	Will likely be mobile in the environment due to its water solubility

Other adverse effects

No information available.

SECTION 13. Disposal considerations

Waste Disposal Methods

Dispose of in accordance with all applicable national environmental laws and regulations.

Disposal considerations

Do not empty into drains; dispose of this material and its container in a safe way.

SECTION 14. Transport information

This material is subject to regulation as a hazardous material for shipping:

DOT

UN number	UN3265 (maleic acid)
Transport hazard class(es)	8
Packing group	III
Special provisions	IB3, T7, TP1, TP28
Emergency response guide number	153

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (maleic acid)
Transport hazard class(es)	8
Packing group	III
ERG code	8L
Special provisions	A3, A803

SECTION 15. Regulatory information

North American Inventory Listing

Chemical Name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	Listed	Not Listed	Listed	Not Listed
maleic acid	Listed	Not Listed	Listed	Not Listed
trometamol	Listed	Not Listed	Listed	Not Listed
sodium azide	Listed	Not Listed	Listed	Not Listed
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:1)	Not Listed	Section 5: 1 %	Listed	Not Listed

SARA 313

Refer to kit component SDS for full SARA Section 313 reporting requirements.

Chemical Name	CAS No	SARA 313 - Threshold Values %
trisodium tetraoxovanadate	13721-39-6	1.0
sodium azide	26628-22-8	1.0
magnesium nitrate	10377-60-3	1.0
copper dinitrate	3251-23-8	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Refer to kit component SDS for full Clean Water Act (CWA) reporting requirements.

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances	CWA - Bioaccumulative Chemicals of Concern (BCCs)
maleic acid	5000 lb	Not Listed	Not Listed	Listed	Not Listed

CERCLA

Refer to kit component SDS for full Comprehensive Environmental Response Compensation and Liability Act (CERCLA) reporting requirements.

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
maleic acid	5000 lb	Not Listed
sodium azide	1000 lb	1000 lb

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Refer to kit component SDS for applicable State Right-To-Know (RTK) information.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
maleic acid	Listed	Listed	Listed
disodium hydrogenorthophosphate	Listed	Listed	Listed
tetrasodium pyrophosphate, decahydrate	Listed	Listed	Listed
trisodium tetraoxovanadate	Listed	Not Listed	Not Listed
sodium azide	Listed	Listed	Listed
magnesium nitrate	Listed	Listed	Listed
copper dinitrate	Listed	Listed	Listed

SECTION 16. Other information

Issuing Date: 2018-01-19

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet