



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

Issuing Date: 2018-01-11

Version: 1

SECTION 1. Identification

Product identifier

Product No 4339
Product name Cyclic AMP XP® Assay Kit
Kit Components **cAMP-HRP Conjugate**
cAMP Standard (2.4uM)
TMB Substrate
STOP Solution
ELISA Wash Buffer (20X)
Cell Lysis Buffer (10X)
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

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 severe skin burns and eye damage. May cause an allergic skin reaction.

Precautionary Statement(s)

Do not breathe dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Wash face, hands and any exposed skin thoroughly after handling. Obtain special instructions before use. Avoid contact during pregnancy/while nursing. Do not eat, drink or smoke when using this product.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

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

No information available.

Hazards not otherwise classified (HNOC)

Not applicable.

SECTION 3. Composition/information on ingredients

Kit Component Name cAMP-HRP Conjugate

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

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 no. 220-239-6] (3:1)	55965-84-9	0.005-0.025

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 cAMP Standard (2.4uM), 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	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
Skin contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	Immediate medical attention is required. Move to fresh air. If symptoms persist, call a physician. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

Most important symptoms and effects, both acute and delayed

Significant esophageal or gastrointestinal tract irritation or burns may occur following ingestion. 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. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. 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.

Indication of any immediate medical attention and special treatment needed

May cause sensitization of susceptible persons. Treat symptomatically.

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	Foam. Carbon dioxide (CO ₂). Dry powder. Water spray.
Unsuitable Extinguishing Media	None.

Specific hazards arising from the chemical

The product causes irritation 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	Use personal protective equipment. Ensure adequate ventilation. Avoid contact with the skin and the eyes. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other information	No information available.

Environmental precautions

Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Do not flush into surface water or sanitary sewer system.

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	Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains.

SECTION 7. Handling and storage**Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions	Keep containers tightly closed in a cool, well-ventilated place. Protect from light.
Packaging material	No information available.
Incompatible products	Strong oxidizing agents. Metals. Strong acids. Strong bases. Strong reducing 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
copper dinitrate	TWA dust and mist: 1 mg/m ³	-	IDLH dust and mist: 100 mg/m ³ TWA dust and mist: 1 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	Safety glasses with side-shields.
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

When using, do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Provide regular cleaning of equipment, work area and clothing. Wash hands before breaks and immediately after handling the product.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

Kit Component	cAMP-HRP Conjugate
Physical state	Liquid
Appearance	Clear
Color	Red
pH VALUE	7.4
Kit Component	cAMP Standard (2.4uM)
Physical state	Liquid
Appearance	Clear
Color	Colorless
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	Cell Lysis Buffer (10X)
Physical state	Liquid
Appearance	Clear
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

Exposure to air or moisture over prolonged periods. Extremes of temperature and direct sunlight.

Incompatible Materials

Strong oxidizing agents. Metals. Strong acids. Strong bases. Strong reducing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides (COx).

SECTION 11. Toxicological information**Information on likely routes of exposure****Product 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 Inhalation	cAMP-HRP Conjugate Avoid breathing vapors or mists May cause irritation of respiratory tract
Kit Component Inhalation	TMB Substrate Avoid breathing vapors or mists May cause irritation of respiratory tract
Kit Component Inhalation	STOP Solution May be harmful if inhaled Aerosol expected to be irritating based on components
Kit Component Inhalation	ELISA Wash Buffer (20X) Avoid breathing vapors or mists May cause irritation of respiratory tract

Eye contact

Kit Component Eye contact	cAMP-HRP Conjugate Avoid contact with eyes May cause slight irritation
Kit Component Eye contact	TMB Substrate Avoid contact with eyes May cause slight irritation
Kit Component Eye contact	STOP Solution May cause irreversible damage to eyes
Kit Component Eye contact	ELISA Wash Buffer (20X) Avoid contact with eyes Expected to be an irritant based on components
Kit Component Eye contact	Cell Lysis Buffer (10X) May cause temporary eye irritation Expected to be an irritant based on components

Skin contact

Kit Component Skin contact	cAMP-HRP Conjugate Repeated or prolonged skin contact may cause allergic reactions with susceptible persons
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Kit Component Skin contact	TMB Substrate Avoid contact with skin and clothing May cause skin irritation and/or dermatitis
Kit Component Skin contact	STOP Solution Corrosive to skin. Prolonged contact with skin is harmful
Kit Component Skin contact	ELISA Wash Buffer (20X) Avoid contact with skin Expected to be an irritant based on components Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

Ingestion

Kit Component Ingestion	TMB Substrate Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea
Kit Component Ingestion	STOP Solution Harmful if swallowed Ingestion causes burns of the upper digestive and respiratory tract.
Kit Component Ingestion	ELISA Wash Buffer (20X) 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)	-	-
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
copper dinitrate	794 mg/kg (Rat)	-	-

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

Significant esophageal or gastrointestinal tract irritation or burns may occur following ingestion 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 Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing 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

Skin and Eye Corrosion/Irritation

Kit Component Skin corrosion/irritation Serious eye damage/eye irritation	STOP Solution Causes burns Risk of serious damage to eyes
Kit Component Skin corrosion/irritation Serious eye damage/eye irritation	ELISA Wash Buffer (20X) Irritating to skin Causes serious eye irritation

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

Sensitization

Kit Component cAMP-HRP Conjugate
 Skin Sensitization May cause skin sensitization.

Kit Component ELISA Wash Buffer (20X)
 Skin Sensitization May cause skin sensitization.

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)

No information available

Kit Component STOP Solution
 STOT - single exposure Respiratory system

Kit Component ELISA Wash Buffer (20X)
 Chronic Toxicity Repeated contact may cause allergic reactions in very susceptible persons Avoid repeated exposure

Kit Component Cell Lysis Buffer (10X)
 Target Organ Effects Eyes Respiratory system Skin

Aspiration Hazard

No information available.

SECTION 12. Ecological information**Ecotoxicity****Product Information**

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
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC	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	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

no. 220-239-6] (3:1)	mg/L (Pseudokirchneriella subcapitata) 96 h		
copper dinitrate	-	LC50 0.06 mg/L (Menidia menidia) 96 h LC50 0.015 mg/L (Pimephales promelas) 96 h	EC50 0.04 mg/L (Moina dubia) 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

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
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
copper dinitrate	Listed	Not Listed	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
magnesium nitrate	10377-60-3	1.0
copper dinitrate	3251-23-8	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	No
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
copper dinitrate	100 lb	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
copper dinitrate	100 lb	Not Listed

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 disodium	Listed	Not Listed	Not Listed
hydrogenorthophosphate	Listed	Listed	Listed
magnesium nitrate	Listed	Listed	Listed
copper dinitrate	Listed	Listed	Listed

SECTION 16. Other information

Issuing Date: 2018-01-11

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