



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

Issuing Date: 2018-04-11

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Version: 2

SECTION 1. Identification

Product identifier

Product No 8818
Product name Active Rap1 Detection Kit
Kit Component
11521: GTP γ S
11522: GDP
8748: GST-RalGDS-RBD
11524: Lysis/Binding/Wash Buffer
11523: Glutathione Resin
11525: SDS Sample Buffer
8825: Rap1 Rabbit mAb

Hazardous Components

11521: GTP γ S
11524: Lysis/Binding/Wash Buffer
11525: SDS Sample Buffer
Other means of identification 11524S

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 2
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity - single exposure (STOT SE)	Category 3

GHS Label elements, including precautionary statements

**Signal Word**

Danger.

Hazard statement(s)

Causes serious eye damage.

Causes skin irritation.

May cause respiratory irritation.

Precautionary Statement(s)

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wash face, hands and any exposed skin thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

Call a POISON CENTER or doctor/physician if you feel unwell

IF ON SKIN: Gently wash with plenty of soap and water.

Take off contaminated clothing and wash before reuse.

If skin irritation 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.

If eye irritation persists: Get medical advice/attention.

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Dispose of contents/container to an approved waste disposal plant.

Supplementary Hazard Information**Hazards not otherwise classified (HNOC)**

Not applicable.

SECTION 3. Composition/information on ingredients
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Kit Component 11521: GTP γ S

WARNING: Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Chemical name	CAS No	Weight-%
Guanosine 5'-(trihydrogen diphosphate), monoanhydride with phosphorothioic acid, tetralithium salt	94825-44-2	100

Kit Component 11522: GDP

Chemical name	CAS No	Weight-%
guanosine 5'-(disodium hydrogen pyrophosphate)	7415-69-2	60-100

Kit Component 11523: Glutathione Resin

Chemical name	CAS No	Weight-%
glutathione	70-18-8	0.1-1

sodium azide	26628-22-8	<0.1
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	<0.0015

Kit Component 11524: Lysis/Binding/Wash Buffer

WARNING: Causes serious eye irritation.

Chemical name	CAS No	Weight-%
glycerol	56-81-5	1-5
Nonylphenol, ethoxylated	9016-45-9	0.1-1

Kit Component 11525: SDS Sample Buffer

DANGER: Causes skin irritation Causes serious eye damage

Chemical name	CAS No	Weight-%
glycerol	56-81-5	10-30
trometamol	77-86-1	1-5
sodium dodecyl sulphate	151-21-3	1-5

**Kit Component 8748: GST-RaIGDS-RBD
8825: Rap1 Rabbit mAb**

These products do not contain substances at concentrations requiring disclosure under 29 CFR 1910.1200 (OSHA Hazard Communication Standard).

SECTION 4. First-aid measures

Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.
Skin contact	Wash off immediately with plenty of water. If skin irritation persists, call a physician.
Inhalation	Move to fresh air. If symptoms persist, call a physician.
Ingestion	If swallowed, do not induce vomiting - seek medical advice. Rinse mouth. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Corrosive to the eyes and may cause irreversible eye damage. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Indication of any immediate medical attention and special treatment needed

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

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products Carbon oxides (COx). Nitrogen oxides (NOx). Sulfur oxides. Phosphorus oxides. Hazardous metal fumes and oxides.

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. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Other information No information available.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

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. Clean contaminated surface thoroughly.

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. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Ensure adequate ventilation. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Packaging material No information available.

Incompatible products None known based on information supplied.

SECTION 8. Exposure controls/personal protection

Control parameters

Occupational exposure limit values			
Chemical name	ACGIH TLV	OSHA PEL	NIOSH REL
glycerol	-	TWA mist, total particulate: 15 mg/m ³ TWA mist, respirable fraction: 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	Safety glasses with side-shields.
Skin and body protection	Wear protective gloves/clothing.
Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Hygiene measures	Do not eat, drink or smoke when using this product.

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	11521: GTP γS
Physical state	Solid
Appearance	Powder
Color	White
Odor	Unpleasant
Kit Component	11522: GDP
Physical state	Solid
Color	White
Kit Component	8748: GST-RaIGDS-RBD
Physical state	Liquid
Appearance	Clear
Color	Colorless
Odor	Odorless
pH	7.5
Kit Component	8825: Rap1 Rabbit mAb
Physical state	Liquid
Kit Component	11524: Lysis/Binding/Wash Buffer
Physical state	Liquid

Appearance	Clear
Color	Colorless
Odor	Odorless
pH	7.1-7.3

Kit Component	11523: Glutathione Resin
Physical state	Liquid
Appearance	Suspension
Color	Off-white
Odor	Odorless

Kit Component	11525: SDS Sample Buffer
Physical state	Liquid
Color	Blue
Odor	Odorless
pH	6.8

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

No information available.

Incompatible Materials

None known based on information supplied.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors

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

There is no data available for this product.

Eye contact

Expected to be an irritant based on components

Kit Component **11524: Lysis/Binding/Wash Buffer**
Eye contact Causes serious eye irritation.

Kit Component **11525: SDS Sample Buffer**
Eye contact Corrosive to the eyes and may cause severe damage including blindness.

Skin contact There is no data available for this product.

Ingestion There is no data available for this product.

Information on toxicological effects

Component Information

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
glycerol	= 12600 mg/kg (Rat)	> 10 g/kg (Rabbit)	> 570 mg/m ³ (Rat) 1 h
trometamol	5900 mg/kg (Rat)	-	-
sodium dodecyl sulphate	= 1288 mg/kg (Rat)	= 200 mg/kg (Rabbit)	> 3900 mg/m ³ (Rat) 1 h
Nonylphenol, ethoxylated	= 1310 mg/kg (Rat)	= 1780 mg/kg (Rabbit)	-
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) 232 - 249 mg/kg (Rat) = 120 mg/kg (Rat)	= 200 mg/kg (Rabbit)	= 1.23 mg/L (Rat) 4 h = 0.11 mg/L (Rat) 4 h

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

Symptoms Corrosive to the eyes and may cause irreversible eye damage. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Skin and Eye Corrosion/Irritation No information available

Sensitization No information available

Mutagenic effects No information available

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

Aspiration Hazard No information available.

SECTION 12. Ecological information

Ecotoxicity

Product Information

Kit Component **11524: Lysis/Binding/Wash Buffer**
Ecotoxicity Harmful to aquatic life

Kit Component **11525: SDS Sample Buffer**

Ecotoxicity

Toxic to aquatic life

Component Information

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
glycerol	-	LC50 51 - 57 mg/L (Oncorhynchus mykiss) 96 h	EC50 500 mg/L (Daphnia magna) 24 h
trometamol	-	-	NOEC >100 mg/L (Selenastrum capricornutum) 96 h
sodium dodecyl sulphate	EC50 53 mg/L (Desmodesmus subspicatus) 72 h EC50 30 - 100 mg/L (Desmodesmus subspicatus) 96 h EC50 42 mg/L (Desmodesmus subspicatus) 96 h EC50 3.59 - 15.6 mg/L (Pseudokirchneriella subcapitata) 96 h EC50 117 mg/L (Pseudokirchneriella subcapitata) 96 h	LC50 8 - 12.5 mg/L (Pimephales promelas) 96 h LC50 4.1 mg/L (Leuciscus idus) 48 h LC50 22.1 - 22.8 mg/L (Pimephales promelas) 96 h LC50 4.3 - 8.5 mg/L (Oncorhynchus mykiss) 96 h LC50 4.62 mg/L (Oncorhynchus mykiss) 96 h LC50 4.2 mg/L (Oncorhynchus mykiss) 96 h LC50 7.97 mg/L (Brachydanio rerio) 96 h LC50 9.9 - 20.1 mg/L (Brachydanio rerio) 96 h LC50 4.06 - 5.75 mg/L (Lepomis macrochirus) 96 h LC50 4.2 - 4.8 mg/L (Lepomis macrochirus) 96 h LC50 4.5 mg/L (Lepomis macrochirus) 96 h LC50 5.8 - 7.5 mg/L (Pimephales promelas) 96 h LC50 10.2 - 22.5 mg/L (Pimephales promelas) 96 h LC50 6.2 - 9.6 mg/L (Pimephales promelas) 96 h LC50 13.5 - 18.3 mg/L (Poecilia reticulata) 96 h LC50 10.8 - 16.6 mg/L (Poecilia reticulata) 96 h LC50 1.31 mg/L (Cyprinus carpio) 96 h LC50 15 - 18.9 mg/L (Pimephales promelas) 96 h	EC50 21.2 mg/L (Daphnia magna) 24 h EC50 1.8 mg/L (Daphnia magna) 48 h
Nonylphenol, ethoxylated	-	LC50 1.0 - 9.7 mg/L (Lepomis macrochirus) 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

No information available

Bioaccumulation**Kit Component**
Bioaccumulation**11524: Lysis/Binding/Wash Buffer**
Does not bioaccumulate**Kit Component**
Bioaccumulation**11523: Glutathione Resin**
Most components of this material are unlikely to bioaccumulate but some have not been tested**Kit Component**
Bioaccumulation**11525: SDS Sample Buffer**
Not likely to bioaccumulate

Chemical name	Octanol-Water Partition Coefficient
glycerol	-1.76
sodium dodecyl sulphate	1.6

Mobility No information available

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. Dispose of wastes in an approved waste disposal facility.

SECTION 14. Transport information

This material is not subject to regulation as a hazardous material for shipping.

SECTION 15. Regulatory information

North American Inventory Listing

Chemical name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
Guanosine 5'-(trihydrogen diphosphate), monoanhydride with phosphorothioic acid, tetralithium salt	Not Listed	Not Listed	Not Listed	Not Listed
glycerol	Listed	Not Listed	Listed	Not Listed
trometamol	Listed	Not Listed	Listed	Not Listed
sodium dodecyl sulphate	Listed	Not Listed	Listed	Not Listed
glutathione	Listed	Not Listed	Listed	Not Listed
Nonylphenol, ethoxylated	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

Chemical name	CAS No	SARA 313 - Threshold Values %
sodium azide	26628-22-8	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

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
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

Chemical name	New Jersey	Massachusetts	Pennsylvania
glycerol	Listed	Listed	Listed
sodium azide	Listed	Listed	Listed

SECTION 16. Other information

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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