

#45115 Store at 4°C

CellSimple™ Annexin V-FITC Early Apoptosis Detection Kit



Support: +1-978-867-2388 (U.S.)
www.cellsignal.com/support

Orders: 877-616-2355 (U.S.)
orders@cellsignal.com

1 Kit (100 assays)

New 02/16

For Research Use Only. Not For Use In Diagnostic Procedures.

Products Included	Product #	Quantity
Annexin V-FITC Conjugate	4894	1 x 100 µl
10X Annexin V Binding Buffer	11732	2 x 1.5 ml
Propidium Iodide (PI) Solution (20X)	11733	1 x 1.3 ml

Description: The CellSimple™ Annexin V-FITC Early Apoptosis Detection Kit is designed for use with the CellSimple™ Cell Analyzer. It allows researchers to identify early apoptotic cells within a cell population. Annexin V-FITC conjugated protein binds to cell surfaces expressing phosphatidylserine, an early apoptosis marker. Necrotic cells can be identified by staining with propidium iodide (PI), a non-cell-permeable DNA dye. Cells stained with both PI and annexin V-FITC are indicative of later stage apoptosis and early necrosis. This kit can be used together with the Apoptosis (Annexin V-FITC, PI) App on the CellSimple™ Cell Analyzer. This kit provides enough reagent to perform 100 assays, based on a 250 µl assay volume. The CellSimple™ Cell Analyzer comes complete with a pack of 25 cassettes (50 tests), a USB cord and power adapter, and user documentation.

The CellSimple™ Cell Analyzer is currently only available in the US.

CellSimple™ Cell Analysis System: The CellSimple™ Cell Analyzer is a benchtop instrument that utilizes a disposable thin-film cassette and a combination of a 488 nm laser, two photomultiplier tubes (525/45 nm and 561 nm LP filters), Coulter Principle-based cell measurements, and on-board software to provide easy-to-run applications and data analysis. Data acquisition occurs within approximately 10 seconds per test. The instrument relies on disposable cassettes for sample handling, which alleviates the need for flow cell cleaning and fluidics maintenance and the instrument is small enough to be portable between the lab bench and the hood. Applications include quantitative assessments of cell viability, apoptosis, other labeled antibody markers and single and multiplexed bead-based assays for protein and cellular analysis.

Background: Annexin V belongs to the annexin family of proteins consisting of over 160 members. All annexin family members share the same characteristic of Ca²⁺-dependent binding to negatively charged phospholipid surfaces (1). During early apoptosis, phosphatidylserine (PS) is translocated from the cytosolic side of the plasma membrane to the cellular surface. This translocation exposes PS to the extracellular environment with the plasma membrane left intact (2). Annexin V protein demonstrates high affinity, specificity, and sensitivity for PS and can be used as a marker of early apoptosis. In order to rule out “leaky” necrotic cells, annexin V must be used in tandem with reagents that determine the integrity of the cell membrane, such as propidium iodide (2).

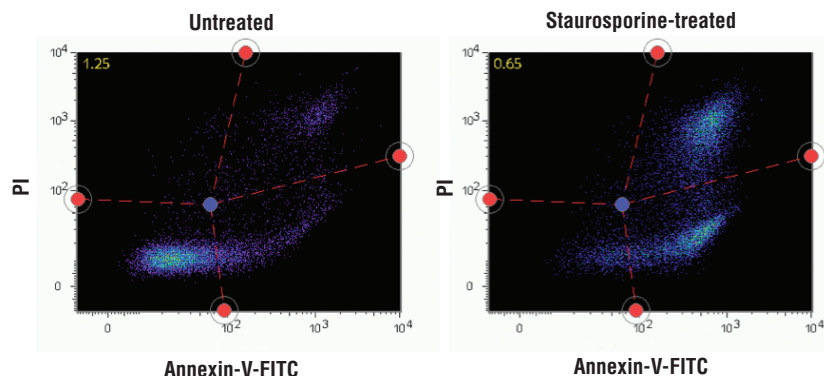
Storage: Store at 4°C. Protect from light. Kit components are stable for 12 months.

Background References:

- (1) Boersma, H.H. et al. (2005) *J Nucl Med* 46, 2035-50.
- (2) Vermes, I. et al. (1995) *J Immunol Methods* 184, 39-51.

Directions for Use:

1. Dilute the 10X Annexin V Binding Buffer with dH₂O to 1X and keep on ice.
2. Collect cells of interest by centrifugation. Wash cells with ice-cold culture medium or PBS.
3. Resuspend cells at 10⁵ to 10⁶ cells/ml with 1X Annexin V Binding Buffer. Aliquot 96 µl cell suspension in an assay tube.
4. Add 1 µl Annexin V-FITC Conjugate and 12.5 µl Propidium Iodide (PI) Solution (20X) to each 96 µl cell suspension. Allow cells to incubate 10 min on ice in the dark.
5. Dilute the cell suspension to a final volume of 250 µl/assay with ice-cold, 1X Annexin V Binding Buffer. Analyze immediately, using the Apoptosis (Annexin V-FITC, PI) App on the CellSimple™ Cell Analyzer.



◀ Analysis of apoptosis in Jurkat cells untreated (left panel) or treated with Staurosporine (10 µM, 3.5 hours; right panel), using the The CellSimple™ Annexin V-FITC Early Apoptosis Detection Kit and the CellSimple™ Cell Analyzer. Instrument screenshots are shown. Live cells appear in the lower left quadrant of the plots, while early and late apoptotic cells appear in the lower and upper right quadrants, respectively.

Thank you for your recent purchase. If you would like to provide a review visit cellsignal.com/comments.

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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide Species Cross-Reactivity: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



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

Issuing Date: 2016-03-17

Revision Date: 2016-03-17

Version: 1

SECTION 1. Identification

Product identifier

Product number 4894
Product name Annexin V-FITC Conjugate

Recommended use of the chemical and restrictions on use

Identified uses This product is intended for research purposes only.
Uses advised against This product is not intended for use in diagnostic procedures or therapeutics.
This product is not intended for use in humans or animals.

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 not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Label elements, including precautionary statements

Signal Word None

Hazard statement(s) None.

Precautionary Statement(s) None.

Supplementary Hazard Information

None
Hazards not otherwise classified (HNOC) Not applicable.

SECTION 3. Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health.

SECTION 4. First-aid measures

Eye contact Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. Get medical attention if irritation persists.
Skin contact Wash skin with soap and water.
Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur.
Ingestion 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 an animal derived biological. May produce an allergic reaction in susceptible individuals.

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

Specific hazards arising from the chemical

No information available.

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. For personal protection see section 8.
Other information No information available.

Environmental precautions

See Section 12 for additional information.

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.

SECTION 7. Handling and storage

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. For personal protection see section 8. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use.

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

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

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 If splashes are likely to occur, wear: Tightly fitting safety goggles.
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 Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid	Color	Clear
Appearance	Transparent	Odor Threshold	No information available
Odor	No information available	Remarks	Method
Property	Values		
pH	7.5		
Melting point/freezing point			
Initial boiling point and boiling range			
Flash point			
Evaporation rate	No information available		

Flammability (solid, gas)	No information available
Upper flammability limit	No information available
Upper flammability limit	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Solubility	No information available.
Solubility in other solvents	No information available.
Partition coefficient: n-octanol/water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Other information	
Softening point	No information available
Molecular Weight	No information available
VOC content	No information available
Density	No information available.
Bulk Density VALUE	No information available.

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

None known based on information supplied.

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation No known hazard by inhalation.
Eye contact Avoid contact with eyes. May cause slight irritation.
Skin contact Avoid contact with skin. May cause slight irritation after prolonged contact with skin.
Ingestion Low order of toxicity based on components. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on toxicological effects

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.

ATEmix (oral)	>5000 mg/kg
ATEmix (dermal)	>5000 mg/kg
Delayed and immediate effects as well as chronic effects from short and long-term exposure	
Symptoms	Contains an animal derived biological. May produce an allergic reaction in susceptible individuals.
Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not classified.
Sensitization	No sensitizing effects known based on information supplied.
Mutagenic effects	Not classified.
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. No component of this product present at levels greater than or equal to 0.1% are known or suspected carcinogens.
Reproductive toxicity	Not classified.
STOT - single exposure	None known.
STOT - repeated exposure	None known.
Neurological effects	No information available.
Aspiration Hazard	No information available.

SECTION 12. Ecological information**Ecotoxicity**

Product does not present an aquatic toxicity hazard based on known or supplied information.

Persistence and degradability	No information available.
Bioaccumulation	No information available.
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.

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**

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

Issuing Date: 2016-03-17

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Version: 1

SECTION 1. Identification**Product identifier**

Product number	11732
Product name	10X Annexin V Binding Buffer

Recommended use of the chemical and restrictions on use

Identified uses	This product is intended for research purposes only.
Uses advised against	This product is not intended for use in diagnostic procedures or therapeutics.
Manufacturer, importer, supplier	This product is not intended for use in humans or animals.

Manufacturer address	Cell Signaling Technology, Inc. 3 Trask Lane Danvers, MA 01923 United States TEL: +1 978 867 2300 FAX: +1 978 867 2400 www.cellsignal.com support@cellsignal.com
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 not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Label elements, including precautionary statements**Signal Word**
None**Hazard statement(s)**
None.**Precautionary Statement(s)**
None.**Supplementary Hazard Information**None
Hazards not otherwise classified (HNOC)
Not applicable.**SECTION 3. Composition/information on ingredients****Canadian Workplace Hazardous Materials Information System (WHMIS) Classification**This product does not meet the criteria for classification under the Hazardous Products Act. **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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

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

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
edetic acid	Listed	Listed	Listed

U.S. FIFRA Label Information

This product does not contain any substances regulated as pesticides.

US Commerce Department - Export Administration Regulations Information

This product does not contain any substances regulated under the Chemical Weapons Convention (CWC).

U.S. Drug Enforcement Administration Information

This product does not contain any substances regulated under the DEA.

SECTION 16. Other information

Revision Date: 2016-03-17

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

The product contains no substances which at their given concentration, are considered to be hazardous to health.

SECTION 4. First-aid measures

Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. Get medical attention if irritation persists.
Skin contact	Wash skin with soap and water.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur.
Ingestion	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

None.

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

Specific hazards arising from the chemical

No information available.

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. For personal protection see section 8.
Other information	No information available.

Environmental precautions

See Section 12 for additional information.

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.

SECTION 7. Handling and storage

Precautions for safe handling.

Handle in accordance with good industrial hygiene and safety practice. For personal protection see section 8. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use.

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.

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

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	If splashes are likely to occur, wear: Tightly fitting safety goggles.
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	Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties.

Physical state	Liquid	Color	No information available
Appearance	No information available	Odor Threshold	No information available
Odor	No information available		
Property	Values	Remarks	Method
pH	No information available		
Melting point/freezing point			
Initial boiling point and boiling range			
Flash point			
Evaporation rate	No information available		

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not well defined.

ATEmix (oral)	>5000 mg/kg
ATEmix (dermal)	>5000 mg/kg
Delayed and immediate effects as well as chronic effects from short and long-term exposure.	

Symptoms	None.
Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not classified.
Sensitization	No sensitizing effects known based on information supplied.
Mutagenic effects	Not classified.
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. No component of this product present at levels greater than or equal to 0.1% are known or suspected carcinogens.
Reproductive toxicity	Not classified.
STOT - single exposure	None known.
STOT - repeated exposure	None known.
Neurological effects	No information available.
Aspiration Hazard	No information available.

SECTION 12. Ecological information

Ecotoxicity.

Product does not present an aquatic toxicity hazard based on known or supplied information.

Persistence and degradability	No information available.
Bioaccumulation	No information available.
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.

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.

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Flammability (solid, gas)	No information available
Upper flammability limit	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available.
Solubility	No information available.
Solubility in other solvents	No information available.
Partition coefficient: n-octanol/water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Other information	
Softening point	No information available
Molecular Weight	No information available
VOC content	No information available
Density	No information available.
Bulk Density VALUE	No information available.

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.

None known based on information supplied.

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation	No known hazard by inhalation.
Eye contact	Avoid contact with eyes. May cause slight irritation.
Skin contact	Avoid contact with skin. May cause slight irritation after prolonged contact with skin.
Ingestion	Low order of toxicity based on components. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on toxicological effects.

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

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Canadian Workplace Hazardous Materials Information System (WHMIS) Classification.

This product does not meet the criteria for classification under the Hazardous Products Act.

SARA 313.

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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

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

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

U.S. FIFRA Label Information

This product does not contain any substances regulated as pesticides.

US Commerce Department - Export Administration Regulations Information

This product does not contain any substances regulated under the Chemical Weapons Convention (CWC).

U.S. Drug Enforcement Administration Information

This product does not contain any substances regulated under the DEA.

SECTION 16. Other information

Revision Date: 2016-03-17

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 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

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

Issuing Date: 2016-03-17

Revision Date: 2016-03-17

Version: 1

SECTION 1. Identification

Product identifier

Product number 11733
 Product name Propidium Iodide (PI) Solution

Recommended use of the chemical and restrictions on use

Identified uses This product is intended for research purposes only.
 Uses advised against This product is not intended for use in diagnostic procedures or therapeutics.
 This product is not intended for use in humans or animals.

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 not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Label elements, including precautionary statements

Signal Word None

Hazard statement(s) None.

Precautionary Statement(s) None.

Supplementary Hazard Information

None
 Hazards not otherwise classified (HNOC) Not applicable.

SECTION 3. Composition/information on ingredients

11733 - Propidium Iodide (PI) Solution

Revision Date: 2016-03-17

See Section 12 for additional information.

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.

SECTION 7. Handling and storage

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. For personal protection see section 8. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use.

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

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

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 If splashes are likely to occur, wear: Tightly fitting safety goggles.
 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 Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid	Color	light pink
Appearance	Transparent	Odor Threshold	No information available
Odor	No information available	Remarks	Method
Property	Values		
pH	7.5		
Melting point/freezing point			
Initial boiling point and boiling range			
Flash point			
Evaporation rate	No information available		

11733 - Propidium Iodide (PI) Solution

Revision Date: 2016-03-17

The product contains no substances which at their given concentration, are considered to be hazardous to health.

SECTION 4. First-aid measures

Eye contact Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. Get medical attention if irritation persists.
 Skin contact Wash skin with soap and water.
 Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur.
 Ingestion 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

None.

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

Specific hazards arising from the chemical

No information available.

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. For personal protection see section 8.
 Other information No information available.

Environmental precautions

11733 - Propidium Iodide (PI) Solution

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Flammability (solid, gas)	No information available
Upper flammability limit	No information available
Upper flammability limit	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Solubility	No information available.
Solubility in other solvents	No information available.
Partition coefficient: n-octanol/water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidizing properties	No information available

Other information	
Softening point	No information available
Molecular Weight	No information available
VOC content	No information available
Density	No information available.
Bulk Density VALUE	No information available.

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

None known based on information supplied.

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation	No known hazard by inhalation.
Eye contact	Avoid contact with eyes. May cause slight irritation.
Skin contact	Avoid contact with skin. May cause slight irritation after prolonged contact with skin.
Ingestion	Low order of toxicity based on components. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on toxicological effects

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.

ATEmix (oral)	>5000 mg/kg
ATEmix (dermal)	>5000 mg/kg
Delayed and immediate effects as well as chronic effects from short and long-term exposure	
Symptoms	None.
Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not classified.
Sensitization	No sensitizing effects known based on information supplied.
Mutagenic effects	Not classified.
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. No component of this product present at levels greater than or equal to 0.1% are known or suspected carcinogens.
Reproductive toxicity	Not classified.
STOT - single exposure	None known.
STOT - repeated exposure	None known.
Neurological effects	No information available.
Aspiration Hazard	No information available.

SECTION 12. Ecological information

Ecotoxicity

Product does not present an aquatic toxicity hazard based on known or supplied information.

Persistence and degradability	No information available.
Bioaccumulation	No information available.
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.

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

Canadian Workplace Hazardous Materials Information System (WHMIS) Classification

This product does not meet the criteria for classification under the Hazardous Products Act.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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

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

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

U.S. FIFRA Label Information

This product does not contain any substances regulated as pesticides.

US Commerce Department - Export Administration Regulations Information

This product does not contain any substances regulated under the Chemical Weapons Convention (CWC).

U.S. Drug Enforcement Administration Information

This product does not contain any substances regulated under the DEA.

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