

#14822 Store at 4°C

Pathscan® Cancer Phenotype Antibody Array Kit (Fluorescent Readout)

1 Kit (32 multiplexed assays)

www.cellsignal.com

Support: 877-678-TECH (8324)
www.cellsignal.com/support

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

New 04/15

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

Species Cross-Reactivity: H

Description: The PathScan® Cancer Phenotype Antibody Array Kit (Fluorescent Readout) uses glass slides as the planar surface and is based upon the sandwich immunoassay principle. The array kit allows for the simultaneous detection of 19 cancer cell associated proteins. Target-specific capture antibodies have been spotted in duplicate onto nitrocellulose-coated glass slides. Each kit contains two slides allowing for the interrogation of 32 different samples and the generation of 608 data points in a single experiment. Cell lysates are incubated on the slide followed by a biotinylated detection antibody cocktail. DyLight™ 680-linked Streptavidin is then used to visualize the bound detection antibody. A fluorescent image of the slide can then be captured with a digital imaging system and spot intensities quantified using array analysis software.

Specificity/Sensitivity: PathScan® Cancer Phenotype Antibody Array Kit (Fluorescent Readout) detects the target proteins as specified on the Array Target Map. No substantial cross-reactivity has been observed between targets. This kit is optimized for cell lysates diluted to a total protein concentration between 0.2 and 1 mg/ml (see kit protocol). All sandwich assays have been validated for human derived samples. This kit detects proteins from the indicated species as determined through in-house testing, but may also detect homologous proteins from other species.

Products Included	Quantity	Cap Color
Array Slides	2 slides	
Multi-Well Gasket	2 gaskets	
Sealing Tape	2 sheets	
20X Array Wash Buffer	15 ml	White
Array Blocking Buffer	5 ml	Red
Array Diluent Buffer	15 ml	Blue
10X Detection Antibody Cocktail	300 µl	White
10X DyLight™ 680-linked Streptavidin	300 µl	Brown
*Cell Lysis Buffer #7018	30 ml	Clear

*Kit should be stored at 4°C with the exception of 1X Cell Lysis Buffer, which is stored at -20°C (packaged separately).

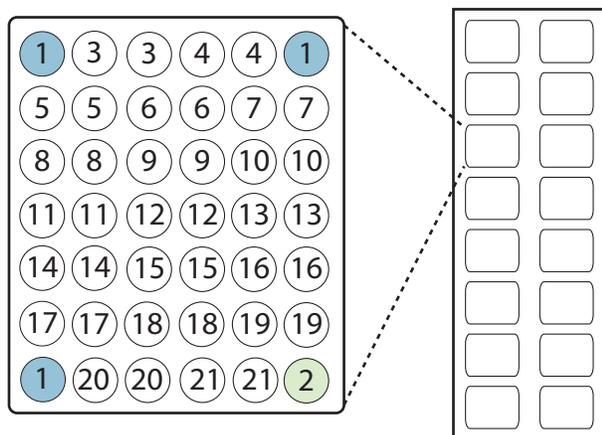


Figure 1. Target Map of the PathScan® Cancer Phenotype Antibody Array Kit (Fluorescent Readout) #14822.

Cancer Phenotype

Target	Site	Modification
1	Positive Control	N/A
2	Negative Control	N/A
3	CD31 (PECAM-1)	Total
4	EpCAM	Total
5	Vimentin	Total
6	CD44	Total
7	CD45	Total
8	PCNA	Total
9	Ki-67	Total
10	p27 Kip1	Total
11	E-Cadherin	Total
12	N-Cadherin	Total
13	VE-Cadherin	Total
14	MUC1	Total
15	Rb	Ser807/811 Phosphorylation
16	HIF-1α	Total
17	Survivin	Total
18	p53	Total
19	HER2/ErbB2	Total
20	Met	Total
21	EGF Receptor	Total

DyLight is a trademark of Thermo Fisher Scientific Inc. and its subsidiaries. U.S. Patent No. 5,675,063
LI-COR® is a trademark of LI-COR Biosciences. Odyssey® is a trademark of LI-COR Biosciences.

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Cell Signaling
TECHNOLOGY®

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.

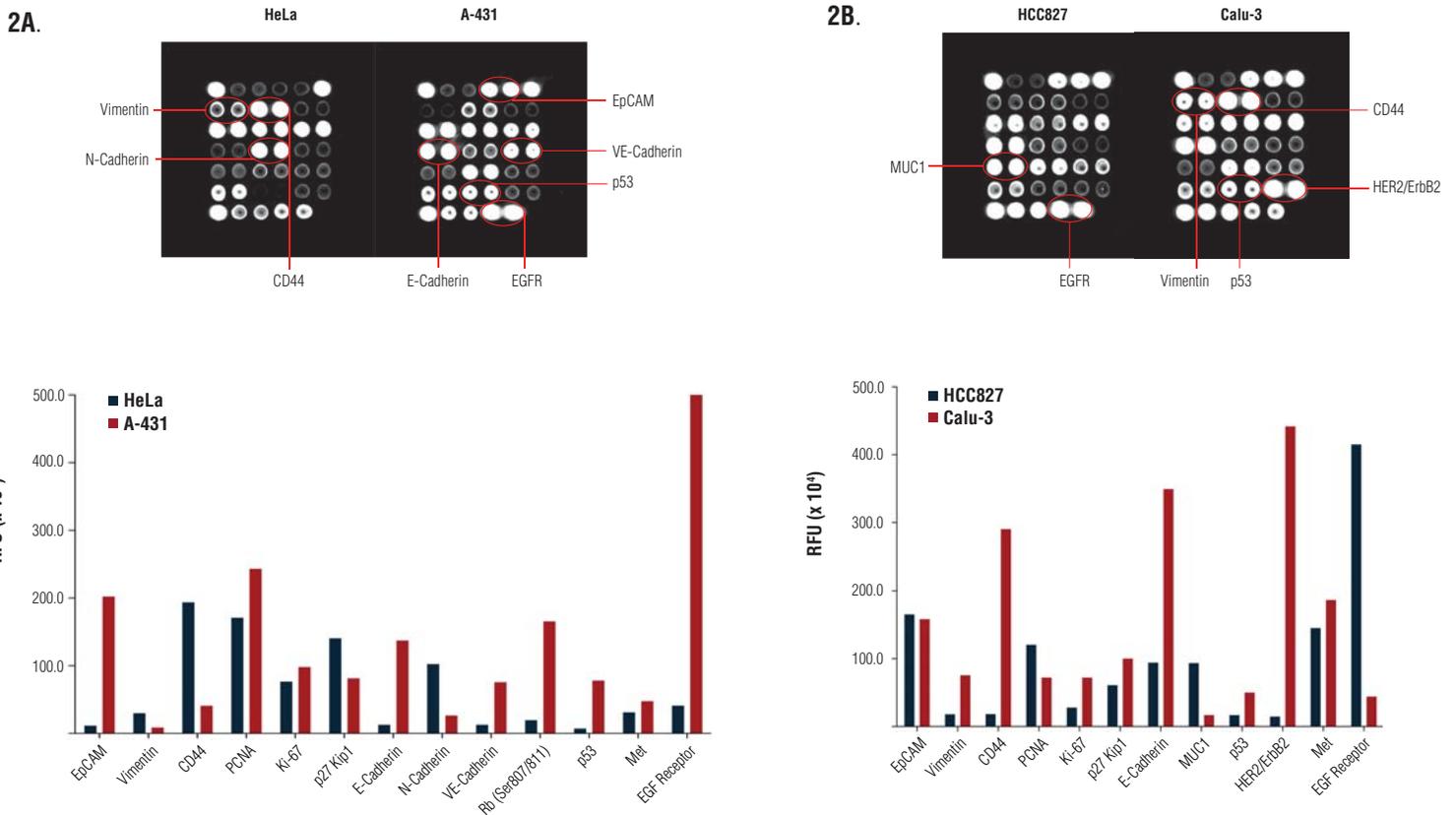


Figure 2. HeLa and A-431 cells (Panel A), and HCC827 and Calu-3 cells (Panel B) were grown to 90% confluency. Cell Lysates were prepared and analyzed using PathScan® Cancer Phenotype Antibody Array Kit (Fluorescent Readout) #14822. Array fluorescent images were acquired using the LI-COR® Biosciences Odyssey® Imaging System (upper) and fluorescence intensities for each spot were quantified using the LI-COR® Image Studio v2.0 array analysis software and depicted as bar graphs (lower).

Background: Despite shared hallmarks and common overarching principles, cancers are heterogeneous in nature. Widely used tumor-derived cell lines will often exhibit both genetic and proteomic differences relative to one another and to the parent cells or tissue. Factors contributing to these differences include the gradual accumulation of genetic lesions within cell lines, transcriptional networks and epigenetic marks remaining from the original tissue, and various adaptations to *in vitro* growth conditions. Cell lines may differ considerably in the architectural details of basic machineries, the wiring of signal transduction circuitry, and the set points of metabolic pathways. As a result, heterogeneous phenotypes within cell lines will manifest as differences in fundamental cellular functions and a range of behaviors under experimental conditions.

The cell surface represents a compartment where a high level of heterogeneity is displayed. Cancer cells can use the wide array of cell surface proteins to sense, attract, and respond to survival or growth factors in order to promote cancer cell proliferation and tumor growth. These cell surface molecules shield cancer cells from the immune response, help to procure nutrients and create more favorable conditions, and provide a means for the spread and colonization of the cancer cells to other tissues. The presence (or absence) of specific cellular proteins can be regarded as a characteristic phenotypic trait that allows for the classification of cancer cell type and may help predict cellular response to specific experimental conditions both *in vitro* and *in vivo*.

Understanding and modeling tumor cell behavior, sensitivity and resistance to various drugs, identification of oncogene dependencies and network vulnerabilities requires a systems-level measurement of multiple parameters. Therefore, it is important to simultaneously survey both the cell surface as well as key molecules that serve as indicators for cell cycle progression, epithelial to mesenchymal transition, and activation of the hypoxic response program.

Background References:

- (1) Scheel, C. and Weinberg, R.A. (2012) *Semin Cancer Biol* 22, 396-403.
- (2) Hale, J.S. et al. (2012) *Cell Adh Migr* 6, 346-55.
- (3) Varga, J. et al. (2014) *FEBS Lett* 588, 2422-7.
- (4) Zöller, M. (2011) *Nat Rev Cancer* 11, 254-67.
- (5) van Roy, F. (2014) *Nat Rev Cancer* 14, 121-34.
- (6) Schnell, U. et al. (2013) *Biochim Biophys Acta* 1828, 1989-2001.
- (7) Kufe, D.W. (2013) *Oncogene* 32, 1073-81.



3.

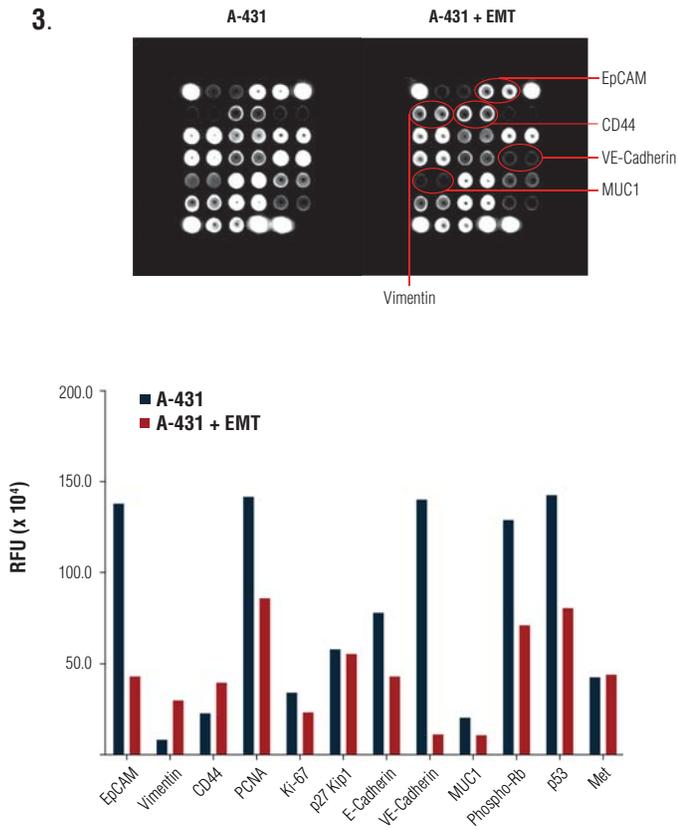


Figure 3. A-431 cells were treated for five days with a cocktail of EMT inducers. Cell lysates were prepared and analyzed using the PathScan® Cancer Phenotype Antibody Array Kit (Fluorescent Readout) #14822. Array fluorescent images were acquired using the LI-COR® Biosciences Odyssey® imaging system (upper) and fluorescence intensities for each spot were quantified using the LI-COR® Image Studio v2.0 array analysis software and depicted as a bar graph (lower).

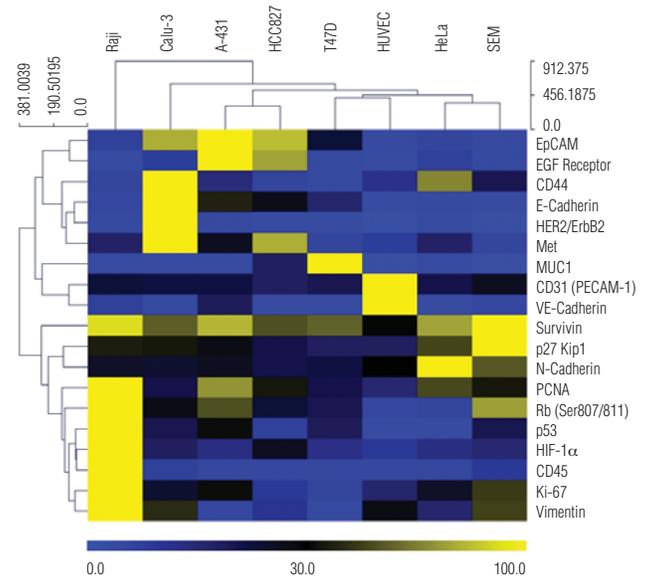


Figure 4. Various cells (indicated) were grown and cell extracts were prepared and analyzed using the PathScan® Cancer Phenotype Antibody Array Kit (Fluorescent Readout) #14822. Slides were scanned using the LI-COR® Biosciences Odyssey CLx infrared imaging system. Fluorescence intensity for each spot was quantified using the LI-COR® Biosciences Image Studio v2.0 array analysis software. Duplicate spot intensities were averaged and values were normalized after subtracting the background signal. The heatmap was generated using MultiExperiment Viewer (MeV) analysis software.

PathScan® Cancer Phenotype Antibody Array Kit (Fluorescent Readout)

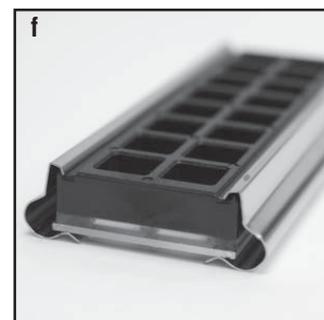
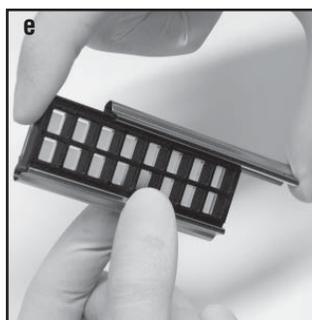
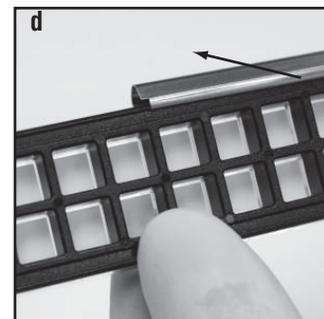
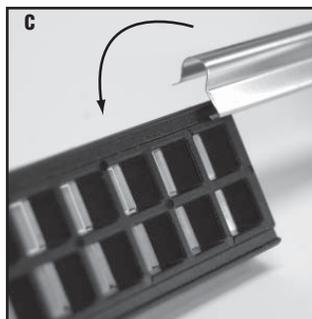
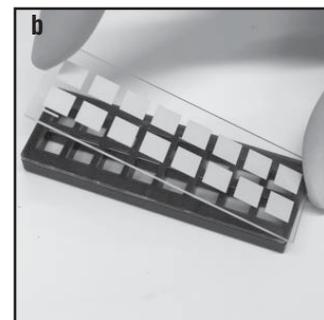
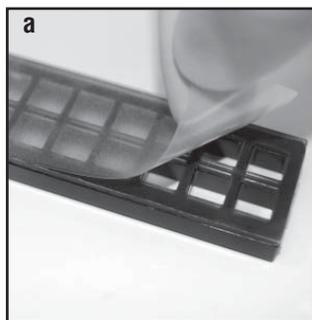
A Preparing Cell Lysates

1. Thaw 1X Cell Lysis Buffer #7018 and mix thoroughly. Supplement 1X Cell Lysis Buffer with a Protease Inhibitor Cocktail (100X) #5871. Keep lysis buffer on ice.
2. Remove media and wash cells once with ice-cold 1X PBS.
3. Remove PBS and add ice-cold 1X Cell Lysis Buffer. For adherent cells, use 0.5 ml 1X Cell Lysis Buffer #7018 for each plate (10 cm in diameter). Incubate on ice for 2 minutes.
4. Transfer lysates to a microcentrifuge tube and microcentrifuge at maximum speed for 2 minutes at 4°C.
5. Transfer the supernatant to a new tube. The supernatant is the cell lysate and may be used immediately or stored at -80°C in single-use aliquots.
6. Dilute lysates to 0.2 – 1.0 mg/ml in Array Diluent Buffer immediately before performing the assay. Set aside on ice.

B Assay Procedure

1. Bring glass slides and blocking buffer to room temperature before use.
2. Prepare 1X Array Wash Buffer by diluting 20X Array Wash Buffer in deionized water.
Dilute 1 ml of 20X Array Wash Buffer with 19 ml of deionized water. Label as 1X Array Wash Buffer. Keep at room temperature.
3. Prepare 1X Detection Antibody Cocktail as follows:
For running only 1 slide: Dilute 150 µl of 10X Detection Antibody Cocktail with 1350 µl of Array Diluent Buffer.
For running 2 slides: Dilute 300 µl of 10X Detection Antibody Cocktail with 2700 µl of Array Diluent Buffer.
4. Prepare 1X DyLight™ 680-linked Streptavidin as follows:
For running only 1 slide: Dilute 150 µl of 10X DyLight™ 680-linked Streptavidin with 1350 µl of Array Diluent Buffer.
For running 2 slides: Dilute 300 µl 10X DyLight™ 680-linked Streptavidin with 2700 µl of Array Diluent Buffer.
*Keep on ice and protect from light.
5. Affix the multi-well gasket to the glass slide (see figure at right):
 - a. Place the multi-well gasket facedown on the bench top (the silicone layer should be facing up). Remove the protective plastic film.
 - b. Carefully place the glass slide on top of the multi-well gasket with the nitro-cellulose pads facing down while aligning the pads with the openings in the gasket. The orientation line should appear in the upper left hand corner when the slide is oriented vertically.
 - c. Insert the metal clip into the groove in the gasket and rotate the clip into the locked position. Ensure that the clip is on the same side as the orientation line on the slide.
Note: one of the clips has a small dot etched onto the upper rib to assist with pad designation (see slide assembly photos).
 - d. Slide the clip into place.
 - e. Snap the unmarked metal clip to the other side of the assembly in the same manner and slide into place.
 - f. The assembled array is ready to use.
6. Add 100 µl Array Blocking Buffer to each well and cover with sealing tape. Incubate for 15 minutes at room temperature on an orbital shaker.
Note: Do not allow the pads to dry out until after step 14.
7. Decant Array Blocking Buffer by gently flicking out the liquid into a sink or other appropriate waste receptacle. Add 75 µl of diluted lysate to each well and cover with sealing tape. Incubate for 2 hours at room temperature (or overnight at 4°C) on an orbital shaker.
8. Decant well contents by gently flicking out the liquid into a sink or other appropriate waste receptacle. Add 100 µl 1X Array Wash Buffer to each well and incubate for 5 minutes at room temperature on an orbital shaker. Repeat three more times. Decant well contents.
9. Add 75 µl 1X Detection Antibody Cocktail to each well and cover with sealing tape. Incubate for 1 hour at room temperature on an orbital shaker.
10. Wash 4 X 5 minutes with 100 µl 1X Array Wash Buffer as in step 8.
Note: From this point on, keep slide protected from light.
11. Add 75 µl 1X DyLight™ 680-linked Streptavidin to each well and cover with sealing tape. Incubate for 30 minutes at room temperature on an orbital shaker.
12. Wash 4 X 5 minutes with 100 µl 1X Array Wash Buffer as in step 8.
13. Remove multi-well gasket by pulling the bottom of the metal clips away from the center of the slide, then peeling the slide and gasket apart.
14. Place the slide face up in a plastic dish (a clean pipette tip box cover works well). Wash once for 10 seconds with 10 ml deionized water.
15. Remove slide from plastic dish and allow to completely dry.
16. Capture an image of the slide using a fluorescent digital imaging system capable of exciting at 680 nm and detecting at 700 nm. Quantify spot intensities using commercially available array image analysis software.

DyLight™ is a registered trademark of Thermo Fisher Scientific Inc. and its subsidiaries.





Safety Data Sheet (SDS) According to the OSHA Hazard Communication Standard 29 CFR 1910.1200
 Issuing Date: 2016-01-11 Revision Date: 2016-01-11 Version: 1

SECTION 1. Identification

Product identifier

Product number 9H990W
 Product name 20x Array Wash 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.
 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 considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<u>Serious eye damage/eye irritation</u>	Category 2B
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GHS Label elements, including precautionary statements

Signal Word
 Warning

Hazard statement(s)
 Causes eye irritation.

Precautionary Statement(s)
 Wash face, hands and any exposed skin thoroughly after handling.
 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.

Supplementary Hazard Information
 No information available.
 Hazards not otherwise classified (HNOC)
 Not applicable.

SECTION 3. Composition/information on ingredients

9H990W - 20x Array Wash Buffer Revision Date: 2016-01-11

<u>Methods for containment</u>	Prevent further leakage or spillage if safe to do so.
<u>Methods for cleaning up</u>	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.

Conditions for safe storage, including any incompatibilities

<u>Technical measures/Storage conditions</u>	Keep containers tightly closed in a dry, cool and well-ventilated place.
<u>Packaging material</u>	No information available.
<u>Incompatible products</u>	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.

<u>Eye/face protection</u>	Safety glasses with side-shields.
<u>Skin and body protection</u>	Wear protective gloves/clothing.
<u>Respiratory protection</u>	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.
<u>Hygiene measures</u>	Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

<u>Physical state</u>	Liquid	<u>Color</u>	Colorless
<u>Appearance</u>	Clear	<u>Odor Threshold</u>	No information available
<u>Odor</u>	No information available		

9H990W - 20x Array Wash Buffer Revision Date: 2016-01-11

SECTION 4. First-aid measures

<u>Eye contact</u>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<u>Skin contact</u>	Wash skin with soap and water.
<u>Inhalation</u>	Move to fresh air.
<u>Ingestion</u>	If swallowed, do not induce vomiting - seek medical advice.

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Advice for emergency responders

<u>General advice</u>	For further assistance, contact your local Poison Control Center.
<u>Protection of first-aiders</u>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SECTION 5. Fire-fighting measures

Extinguishing media

<u>Suitable Extinguishing Media</u>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<u>Unsuitable Extinguishing Media</u>	CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Explosion Data

<u>Sensitivity to Mechanical Impact</u>	None.
<u>Sensitivity to Static Discharge</u>	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 procedure

<u>For non-emergency personnel</u>	Ensure adequate ventilation.
<u>Other information</u>	No information available.

Environmental precautions

See Section 12 for additional information.

Methods and material for containment and cleaning up

9H990W - 20x Array Wash Buffer Revision Date: 2016-01-11

Property	Values	Remarks Method
pH	7.4	@ 20 °C
<u>Melting point/freezing point</u>		
<u>Initial boiling point and boiling range</u>		
<u>Flash point</u>	No information available	
<u>Evaporation rate</u>	No information available	
<u>Flammability (solid, gas)</u>	No information available	
<u>Upper flammability limit</u>	No information available	
<u>Lower flammability limit</u>	No information available	
<u>Vapor pressure</u>	No information available	
<u>Vapor density</u>	No information available	
<u>Relative density</u>	No information available	
<u>Solubility</u>	No information available.	
<u>Solubility in other solvents</u>	No information available.	
<u>Partition coefficient: n-octanol/water</u>	No information available	
<u>Autoignition temperature</u>	No information available	
<u>Decomposition temperature</u>	No information available	
<u>Viscosity</u>	No information available	
<u>Viscosity, dynamic</u>	No information available	
<u>Explosive properties</u>	No information available	
<u>Oxidizing properties</u>	No information available	
<u>Other information</u>		
<u>Softening point</u>	No information available	
<u>Molecular Weight</u>	No information available	
<u>VOC content</u>	No information available	
<u>Density</u>	No information available.	
<u>Bulk Density VALUE</u>	No information available.	

SECTION 10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

<u>Hazardous reactions</u>	None under normal processing.
<u>Hazardous polymerization</u>	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	Not an expected route of exposure. Aerosol expected to be irritating based on components.
Eye contact	Contact with eyes may cause mild irritation.
Skin contact	May cause slight irritation after prolonged contact with skin.
Ingestion	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) 17818 mg/kg

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

Symptoms	No information available.
Serious eye damage/eye irritation	Mildly irritating to eyes.
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.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Neurological effects	No information available.
Aspiration Hazard	No information available.

SECTION 12. Ecological information**Ecotoxicity**

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.

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SECTION 16. Other information

Issuing Date: 2014-10-27
Revision Date: 2016-01-11
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

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SECTION 15. Regulatory information**North American Inventory Listing****Canadian Workplace Hazardous Materials Information System (WHMIS) Classification**

	Class D2B - Toxic Material at >= 1%
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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	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

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 contains the following U.S. State Right to Know chemicals:

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.

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Safety Data Sheet (SDS) According to the OSHA Hazard Communication Standard 29 CFR 1910.1200
Issuing Date: 2015-12-11 Revision Date: 2015-12-09

Version: 1

SECTION 1. Identification**Product identifier**

Product number UI3YXO
Product name Array Diluent 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.
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 considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1

GHS Label elements, including precautionary statements

Signal Word
Warning

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

Precautionary Statement(s)

Page 1 / 8

Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace.

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash 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. If eye irritation persists: Get medical advice/attention. Dispose of contents/container to an approved waste disposal plant.

Supplementary Hazard Information

May produce an allergic reaction

Hazards not otherwise classified (HNOC)

Not applicable.

SECTION 3. Composition/information on ingredients

Chemical Name	CAS No	Weight %
Bovine Serum Albumin	9048-46-8	5
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	0,5

SECTION 4. First-aid measures

Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Get medical attention if irritation persists.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. May cause an allergic skin reaction. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
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

May cause an allergic skin reaction including itching, redness, and rash. 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. Contains an animal derived biological. May produce an allergic reaction in susceptible individuals. 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.

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 Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not get in eyes, on skin, or on clothing. Use personal protective equipment. For personal protection see section 8.

Other information No information available.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains, sewers, basements or confined areas.

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. Wear personal protective equipment. Refer to Section 8. Prevent contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. 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 Strong oxidizing agents. Strong acids. Strong bases.

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	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	Remarks Method	
Property	Values		
pH	No information available		
Melting point/freezing point	No information available		
Initial boiling point and boiling range	No information available		
Flash point	No information available		
Evaporation rate	No information available		
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

Extremes of temperature and direct sunlight.

Incompatible Materials

Strong oxidizing agents. Strong acids. Strong bases.

Hazardous Decomposition Products

None known based on information supplied.

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation of respiratory tract.
Eye contact	Expected to be an irritant based on components. Severely irritating to eyes.
Skin contact	Expected to be an irritant based on components. Prolonged contact may cause redness and irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Ingestion	May be harmful if swallowed. 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.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
dipotassium hydrogenorthophosphate	4900 mg/kg (Rat)	-	-
Bovine Serum Albumin	= 12,500 mg/kg (Rat) (Intravenous)	-	-
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)	-	-

ATEmix (oral) 4121 mg/kg

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

Symptoms	May cause an allergic skin reaction including itching, redness, and rash. 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. Contains an animal derived biological. May produce an allergic reaction in susceptible individuals. 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.
Sensitization	May cause sensitization by skin contact.
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.
STOT - single exposure	No information available.

STOT - repeated exposure No information available.
Neurological effects No information available.
Aspiration Hazard No information available.

SECTION 12. Ecological information

Ecotoxicity

94.5% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
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 0.03 - 0.13 mg/L (Pseudokirchneriella subcapitata) 96 h EC50 0.31 mg/L (Anabaena flos-aquae) 120 h	LC50 1.6 mg/L (Oncorhynchus mykiss) 96 h	EC50 0.12 - 0.3 mg/L (Daphnia magna) 48 h EC50 0.71 - 0.99 mg/L (Daphnia magna) 48 h EC50 4.71 mg/L (Daphnia magna) 48 h

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

Chemical Name	Octanol-Water Partition Coefficient
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)	-0.71

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

Chemical Name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
Bovine Serum Albumin	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

Canadian Workplace Hazardous Materials Information System (WHMIS) Classification

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End of Safety Data Sheet

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Class D2B - Toxic Material at >= 1%

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	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

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: 2015-12-09

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.

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Safety Data Sheet (SDS) According to the OSHA Hazard Communication Standard 29 CFR 1910.1200
 Issuing Date: 2016-01-11 Revision Date: 2016-01-11

Version: 1

SECTION 1. Identification

Product identifier

Product number 7018
 Product name PathScan® Sandwich ELISA Lysis Buffer (1X)
 Other means of identification 7018P2, 7018S

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
 www.cellsignal.com
 Website support@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)

Serious eye damage/eye irritation

Category 2A

GHS Label elements, including precautionary statements



Signal Word

Warning

Hazard statement(s)

Causes serious eye irritation.

Precautionary Statement(s)

Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

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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.

Supplementary Hazard Information

No information available.
 Hazards not otherwise classified (HNOC)
 Contact with acids liberates very toxic gas.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous solution of organic and inorganic compounds

Chemical Name	CAS No	Weight %
polyethylene glycol	9002-93-1	0.5-1.5
p-(1,1,3,3-tetramethylbutyl)phenylether		
tetrasodium pyrophosphate, decahydrate	13472-36-1	0.1-1
sodium fluoride	7881-49-4	0.1-1

SECTION 4. First-aid measures

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact Wash skin with soap and water.
Inhalation Move to fresh air.
Ingestion Call a physician immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting - seek medical advice. Rinse mouth.

Most important symptoms and effects, both acute and delayed

No information available.

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: Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol-resistant foam.
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 Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment.
Other information No information available.

Environmental precautions

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 Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

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

Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment. Prevent the formation of vapors, mists and aerosols.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.
Packaging material No information available.
Incompatible products None known based on information supplied.

SECTION 8. Exposure controls/personal protection**Control parameters**

Chemical Name	Occupational exposure limit values		NIOSH REL
	ACGIH TLV	OSHA PEL	
tetrasodium pyrophosphate, decahydrate	-	-	TWA : 5 mg/m ³
sodium fluoride	TWA : 2.5 mg/m ³	TWA : 2.5 mg/m ³	IDLH : 250 mg/m ³
trisodium tetraoxovanadate	-	-	TWA : 2.5 mg/m ³ Ceiling: 0.05 mg/m ³

(vacated) = Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

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.
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 Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

SECTION 9. Physical and chemical properties**Information on basic physical and chemical properties**

Physical state Liquid
Appearance No information available
Color Clear
Odor No information available
Odor Threshold No information available

Property Values Remarks Method

pH 7.5

Melting point/freezing point
Initial boiling point and boiling range

Flash point No information available

Evaporation rate No information available

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 There is no data available for this product.
Eye contact Expected to be an irritant based on components.
Skin contact There is no data available for this product.
Ingestion There is no data available for this product.

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.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
polyethylene glycol	1,800 mg/kg (Rat)	8,000 mg/kg (Rabbit)	-
p-(1,1,3,3-tetramethylbutyl)phenylether	-	-	-
tetrasodium pyrophosphate, decahydrate	-	-	-

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

Symptoms 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.

Chemical Name	IARC	NTP	OSHA
sodium fluoride	2A	-	X
7881-49-4			

Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Neurological effects No information available.
Aspiration Hazard No information available.

SECTION 12. Ecological information**Ecotoxicity**

99.02% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
sodium fluoride	EC50 272 mg/L (Pseudokirchneriella subcapitata) 96 h EC50 850 mg/L (Desmodesmus subspicatus) 72 h	LC50 180 mg/L (Pimephales promelas) 96 h LC50 38 - 68 mg/L (Oncorhynchus mykiss) 96 h LC50 830 mg/L (Lepomis macrochirus) 96 h LC50 530 mg/L (Lepomis macrochirus) 96 h	EC50 338 mg/L (Daphnia magna) 48 h EC50 98 mg/L (Daphnia magna) 48 h

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

Other adverse effects**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**

Chemical Name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
polyethylene glycol	Listed	Not Listed	Listed	Not Listed
p-(1,1,3,3-tetramethylbutyl)phenylether				
sodium fluoride	Listed	Not Listed	Listed	Not Listed

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

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

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

Other adverse effects**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**

Chemical Name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
polyethylene glycol	Listed	Not Listed	Listed	Not Listed
p-(1,1,3,3-tetramethylbutyl)phenylether				
sodium fluoride	Listed	Not Listed	Listed	Not Listed

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

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances	CWA - Bioaccumulative Chemicals of Concern (BCCs)
sodium fluoride	1000 lb	Not Listed	Not Listed	Listed	Not Listed

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
sodium fluoride	1000 lb	Not Listed

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
tetrasodium pyrophosphate, decahydrate	Listed	Listed	Listed
sodium fluoride	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

Issuing Date: 2014-02-10
Revision Date: 2016-01-11
Disclaimer

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End of Safety Data Sheet