



Safety Data Sheet - Cover Page

The products listed below meet the criteria for classification as hazardous in accordance with The Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Please refer to the indicated Safety Data Sheet (SDS) for information concerning hazards and appropriate protective measures. SDS for products not classified as hazardous are available on request. Visit www.cellsignal.com for additional technical information and support.

Kit No.	Product name
13079	Immunohistochemistry Application Solutions Kit

Kit Component No.	Product name
9997	Tris Buffered Saline with Tween® 20 (TBST-10X)
11725	SignalStain® DAB Chromogen Concentrate



Cell Signaling

TECHNOLOGY®

SAFETY DATA SHEET (SDS): According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Issuing Date: 2014-04-03

Revision Date: 2014-04-03

Version: 1

SECTION 1. Identification

Product identifier

Product No. 9997
Product name Tris Buffered Saline with Tween® 20 (TBST-10X)
Description For use as a wash buffer during western blotting.
Other means of identification 9997BC, 9997P, 9997P2, 9997S

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
TEL: +1 978 867 2300
FAX: +1 978 867 2400

Website www.cellsignal.com
Email address support@cellsignal.com
Company phone number 978-867-2300
Emergency telephone number In case of emergency call CHEMTREC 1-800-424-9300

SECTION 2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	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

Hazards not otherwise classified (HNOC) None.

SECTION 3. Composition/information on ingredients**Chemical nature** Aqueous buffer solution

Chemical Name	CAS No.	Weight %
Sorbitan monolaurate, ethoxylated	9005-64-5	0.1-1%
trometamol	77-86-1	1-5%
sodium chloride	7647-14-5	7-13%

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 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

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 Ensure adequate ventilation.

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 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

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, Lithium alkyls, Bromine compounds.

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 Safety glasses with side-shields.

Skin and body protection Wear protective gloves/clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures 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
Appearance	Clear
Odor	No information available
Color	Colorless
Odor Threshold	No information available
pH	7.4
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
Explosive properties	No information available
Oxidizing properties	No information available
VOC content	No information available
Viscosity	No information available
Density	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

Strong oxidizing agents, Lithium alkyls, Bromine compounds.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors: Carbon oxides, Hydrogen chloride, Sodium oxides.

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation	There is no data available for this product.
Eye contact	Contact with eyes may cause irritation.
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
trometamol	= 5900 mg/kg (Rat)	-	-

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

Symptoms	No information available.
Corrosivity	No information available.
Sensitization	No information available.
Mutagenic effects	No information available.
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible or confirmed carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	No information available.
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

Product does not present an aquatic toxicity hazard based on known or supplied information.
1-5% 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
sodium chloride	-	LC50 4747 - 7824 mg/L (Oncorhynchus mykiss) 96 h LC50 12946 mg/L (Lepomis macrochirus) 96 h LC50 5560 - 6080 mg/L (Lepomis macrochirus) 96 h LC50 6420 - 6700 mg/L (Pimephales promelas) 96 h LC50 7050 mg/L (Pimephales promelas) 96 h LC50 6020 - 7070 mg/L (Pimephales promelas) 96 h	EC50 340.7 - 469.2 mg/L (Daphnia magna) 48 h EC50 1000 mg/L (Daphnia magna) 48 h

Persistence and degradability	Product is biodegradable.
Bioaccumulation	Does not bioaccumulate.
Mobility	Will likely be mobile in the environment due to its water solubility but will likely degrade over time

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

Component	TSCA	DSL	NDSL
Sorbitan monolaurate, ethoxylated 9005-64-5 (0.1-1%)	Listed	Listed	Not Listed
trometamol 77-86-1 (1-5%)	Listed	Listed	Not Listed
sodium chloride 7647-14-5 (7-13%)	Listed	Listed	Not Listed

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. EPA Label Information

This product does not contain any substances regulated as pesticides.

SECTION 16. Other information

Issuing Date: 2014-04-03

Revision Date: 2014-04-03

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



Cell Signaling

TECHNOLOGY®

SAFETY DATA SHEET (SDS): According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Issuing Date: 2014-04-16

Revision Date: 2014-04-17

Version: 2

SECTION 1. Identification

Product identifier

Product No. 11725
Product name SignalStain® DAB Chromogen Concentrate
Other means of identification 11725P, 11725S

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
TEL: +1 978 867 2300
FAX: +1 978 867 2400

Website www.cellsignal.com
Email address support@cellsignal.com
Company phone number 978-867-2300
Emergency telephone number In case of emergency call CHEMTREC 1-800-424-9300

SECTION 2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4
Acute dermal toxicity	Category 4
Acute inhalation toxicity	Category 4
Serious eye damage/eye irritation	Category 2A
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B

GHS Label elements, including precautionary statements



Signal Word

Danger

Hazard statement(s)

Harmful if swallowed
 Harmful in contact with skin
 Harmful if inhaled
 Causes serious eye irritation
 Suspected of causing genetic defects
 May cause cancer

Precautionary Statement(s)

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Wear protective gloves/protective clothing/eye protection/face protection
 IF exposed or concerned: Get medical advice/attention
 Call a POISON CENTER or doctor/physician if you feel unwell
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Supplementary Hazard Information

Hazards not otherwise classified (HNOC) None.

Unknown Acute Toxicity 1.75% of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3. Composition/information on ingredients

Chemical nature Liquid solution containing organic and inorganic compounds

Chemical Name	CAS No.	Weight %
biphenyl-3,3',4,4'-tetrayltetraammonium tetrachloride	7411-49-6	0.1-1
Nitriles and derivatives	Proprietary	0.5-1.5

Confidential business information If CAS number is "proprietary", the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

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 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 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 Ensure adequate ventilation.

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 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

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	Safety glasses with side-shields.
Skin and body protection	Wear protective gloves/clothing.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene measures	Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	No information available
Color	Purple, light pink
Odor Threshold	No information available
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
Explosive properties	No information available
Oxidizing properties	No information available
VOC content	No information available
Viscosity	No information available
Density	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	Harmful by inhalation.
Eye contact	Irritating to eyes.
Skin contact	Harmful in contact with skin.
Ingestion	Harmful if swallowed.

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.

Unknown Acute Toxicity 1.75% of the mixture consists of ingredient(s) of unknown acute toxicity.

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

Symptoms	No information available.
Serious eye damage/eye irritation	Irritating to eyes.
Corrosivity	No information available.
Sensitization	No information available.
Mutagenic effects	Substances which cause concern for man owing to possible mutagenic effects but for which the available information is not adequate for making a satisfactory assessment.
Carcinogenicity	Contains no ingredient listed as a carcinogen. Based on tumor data from a structural analogue.
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

Product does not present an aquatic toxicity hazard based on known or supplied information.
1.75% of the mixture consists of component(s) of unknown hazards to the aquatic environment

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

Other adverse effects

No information available.

SECTION 13. Disposal considerations
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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
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This material is not subject to regulation as a hazardous material for shipping.

SECTION 15. Regulatory information

North American Inventory Listing

Component	TSCA	DSL	NDSL
biphenyl-3,3',4,4'-tetrayltetraammonium tetrachloride 7411-49-6 (0.1-1)	Listed	Listed	Not Listed
Nitriles and derivatives (0.5-1.5)	Not Listed	Not Listed	Not Listed

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	Yes
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. EPA Label Information

This product does not contain any substances regulated as pesticides.

SECTION 16. Other information

Issuing Date: 2014-04-16

Revision Date: 2014-04-17

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