

MSDS # 12692 Cover Page

Please refer to the following material safety data sheets for hazard and regulatory information specific to individual kit components. This information can also be found on the Cell Signaling Technology, Inc. website www.cellsignal.com

| Product # | Product Name |
|-----------|--|
| 12692 | Signalstain® Apoptosis (Cleaved Caspase-3) IHC Detection Kit |

| Kit Component # | Description | Hazardous |
|-----------------|---|------------------------------------|
| 9579 | Cleaved Caspase-3 (Asp175)(D3E9) Rabbit Monoclonal Antibody | No (MSDS on website) |
| 12960 | Rabbit (DA1E) Monoclonal Antibody IgGXP(R) Isotype Control | No (MSDS on website) |
| 5425 | Normal Goat Serum | No (MSDS on website) |
| 8114 | Signalstain® Boost IHC Detection Reagent | No (MSDS on website) |
| 11724/5 | Signalstain® DAB Diluent / DAB Chromagen Concentrate | Yes (MSDS enclosed, on website) |
| 9997 | Tris Buffered Saline with Tween 20 (TBST 10X) | No (MSDS on website) |

1. PRODUCT AND COMPANY IDENTIFICATION
Product Name

Monoclonal Antibodies in buffered aqueous solution with 50% glycerol

Product Numbers: **9579, 12960**
Identified Uses For Research Use Only (RUO). Not intended for use in humans or animals. Not intended for therapeutic or diagnostic procedures.

Substance/Mixture: Mixture

Manufacturer/Supplier Cell Signaling Technology, Inc.
 3 Trask Lane
 Danvers, MA 01923 USA

Fax #: (978) 867-2400

Phone #: (978) 578-6737

2. HAZARDS IDENTIFICATION
Classification of the substance or mixture

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Not a dangerous mixture according to GHS.

Not a hazardous mixture according to Regulation (EC) No. 1272/2008.

Not a hazardous mixture according to EC-Directives 67/548/EEC or 1999/45/EC

Label elements

-

3. COMPOSITION/INFORMATION ON INGREDIENTS
Hazardous Ingredients

| Chemical Name | CAS No. | EC No. | Concentration | Classification (67/548) | Classification (Reg.1272/2008) |
|---------------|------------|-----------|---------------|---------------------------|--------------------------------|
| Sodium azide | 26628-22-8 | 231-598-3 | 0.02% | T+; R28 R32 N; R50 R53 | Acute Tox. 2 |

4. FIRST AID MEASURES

| | |
|---------------------|--|
| Eye Contact | Rinse immediately with plenty of water. |
| Skin Contact | Rinse immediately with soap and plenty of water. |
| Inhalation | Move to fresh air. |
| Ingestion | Never give anything by mouth to an unconscious person. Rinse mouth with water. |

5. FIRE FIGHTING MEASURES

| | |
|---|---|
| Flash Point | See Section 9. Physical and Chemical Properties |
| Suitable Extinguishing Media | Use water spray, alcohol resistant foam, dry chemical or carbon dioxide |
| Special exposure hazards | No data available |
| Special protection for fire fighters | Wear self-contained breathing apparatus and protective unit |
| Other information | No data available |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Do not touch or walk through spilled material. Wear personal protective equipment |
| Environmental precautions | Do not let product enter drains. |
| Clean up methods | Soak up with absorbent material. Keep in suitable closed containers for disposal. |
| Other information | See sections 12 and 13 for additional information. |

7. HANDLING AND STORAGE

| | |
|-----------------------------|--|
| Safe handling advice | Avoid contact with eyes and skin. Ensure adequate ventilation. |
| Storage conditions | Keep container tightly closed. Recommended storage temperature -20C. |
| Incompatibilities | No data available |
| Specific end uses | No data available |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits Ingredients with workplace control parameters

| Chemical Name | European Union | United Kingdom | France | Spain | Germany |
|----------------------------|--|--|--|-------|---------------------------|
| Sodium azide 26628-22-8 | TWA 0.1 mg/m ³ STEL 0.3 mg/m ³ S* | STEL 0.3 mg/m ³ TWA 0.1 mg/m ³ Skin | VME 0.1 mg/m ³ VLCT 0.3 mg/m ³ P* | S* | AGW 0.2 mg/m ³ |
| Glycerol 56-81-5 | - | STEL 30 mg/m ³ TWA 10 mg/m ³ | VME 10 mg/m ³ | - | - |

| Chemical Name | Italy | Portugal | Netherlands | Finland | Denmark |
|----------------------------|--|--|---|--|------------------------------|
| Sodium azide 26628-22-8 | TWA 0.1 mg/m ³ STEL 0.3 mg/m ³ Pelle* | Ceiling 0.29 mg/m ³ Ceiling 0.11 ppm C(A4) | Huid* STEL 10mg/m ³ TWA 0.1 mg/m ³ | TWA 0.1 mg/m ³ STEL 0.3 mg/m ³ iho* | TWA 0.1 mg/m ³ H* |
| Glycerol 56-81-5 | - | TWA 10 mg/m ³ | - | TWA 10 mg/m ³ | - |

| Chemical Name | Austria | Switzerland | Poland | Norway | Ireland |
|----------------------------|---|---|--|-------------------------------|--|
| Sodium azide 26628-22-8 | H* STEL 0.3 mg/m ³ MAK 0.1 mg/m ³ Skin | MAK 0.2 mg/m ³ STEL 0.4 mg/m ³ | NDS 0.1 mg/m ³ NDSch 0.3 mg/m ³ | Ceiling 0.3 mg/m ³ | TWA 0.1 mg/m ³ STEL 0.3 mg/m ³ Skin |
| Glycerol 56-81-5 | - | SS-C** MAK 50 mg/m ³ STEL 100 mg/m ³ | NDS 10 mg/m ³ | - | |

Legend:

+: Sensitizers * : Skin designation
 **: Hazard Designation C: Carcinogen
 M : Mutagen R: Toxic to reproduction

Exposure Controls

Apply technical measures to comply with the occupational exposure limits.

Engineering Controls

Emergency eyewash and safety shower. Mechanical exhaust required.

Hygiene Measures

Do not eat, drink or smoke when handling product. Wash hands thoroughly after handling product. Wash contaminated clothing before reuse.

Personal Protective Equipment

Respiratory Protection: None under normal use
 Eye Protection: Safety glasses with side shields
 Skin and body protection: Wear suitable protective clothing, protective shoes or boots.
 Hand protection: Compatible chemical resistant gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|------------------------------|-------------------|
| Physical State | liquid |
| Appearance | clear |
| Odor | no data available |
| pH | 7.4 |
| Water Solubility | Soluble |
| Melting point/freezing point | no data available |
| Boiling point | no data available |
| Evaporation rate | no data available |
| Flash point | no data available |
| Autoignition temperature | no data available |
| Flammability limits in air | no data available |
| Explosive properties | no data available |
| VOC content | no data available |
| Decomposition temperature | no data available |

10. STABILITY AND REACTIVITY

Stability

stable under normal conditions

| | |
|---|-------------------|
| Conditions to avoid | no data available |
| Hazardous decomposition products | no data available |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

None known based on the information supplied.

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated.

Routes of Exposure

| | |
|-----------------|--|
| Skin Contact | May cause skin irritation. |
| Skin absorption | May be harmful if absorbed through the skin. |
| Eye Contact | May cause eye irritation. |
| Inhalation | May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. |
| Ingestion | May be harmful if swallowed. |

12. ECOLOGICAL INFORMATION

| | |
|--------------------------------------|---|
| Ecotoxicity | The environmental impact of this product has not been fully investigated. |
| Persistence and degradability | No data available |
| Bioaccumulation | No data available |
| Mobility | No data available |

13. DISPOSAL CONSIDERATIONS

| | |
|-------------------------------|--|
| Waste Disposal Methods | Dispose of in accordance with all applicable environmental laws and regulations. |
|-------------------------------|--|

14. TRANSPORT INFORMATION

| | |
|----------------|----------------------------------|
| RID/ADR | Non-hazardous for road transport |
| IMDG | Non-hazardous for sea transport |
| IATA | Non-hazardous for air transport |

15. REGULATORY INFORMATION

OSHA Hazards

No known OSHA hazards

GHS Classification

Not a dangerous substance according to GHS.

U.S. Federal Regulations

SARA 302

No chemicals in this material are subject to reporting requirements established by SARA Title III, Section 302

SARA 311/312

No SARA hazards

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals that exceed the reporting levels of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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)

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990.

U.S. State Regulations

Massachusetts Right-to-Know Components: -
New Jersey Right-to-Know Components: -
Pennsylvania Right-to-Know Components: -

California Proposition 65

This product does not contain chemicals known to the State of California to cause birth defects or other reproductive harm.

WHMIS Hazard Class

Not controlled.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

16. OTHER INFORMATION

Revision date 2013-08-21

Disclaimer

The information provided on this material safety data sheet is to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Normal Goat Serum

Product Number 5425

Identified Uses For Research Use Only (RUO). Not intended for use in humans or animals.
Not intended for therapeutic or diagnostic procedures.

Substance/Mixture:Mixture

Supplier Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923 USA

Phone #: 1-978-867-2300

Emergency Tel# 1-978-578-6737

2. HAZARDS IDENTIFICATION

Emergency Overview**OSHA Hazards**

No known OSHA hazards.

GHS Classification

Not a dangerous substance according to GHS.

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

This substance is not classified as dangerous according to Directive 67/548/EEC.

Physical State

Liquid

Potential Health Effects**Acute Toxicity**

| | |
|------------|--|
| Eyes | May cause eye irritation. May be harmful if contact with eyes. |
| Skin | May be harmful if absorbed through skin. |
| Inhalation | May be harmful if inhaled. |
| Ingestion | May be harmful if swallowed. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym(s): Serum

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water.

Skin Contact Rinse immediately with soap and plenty of water.

Inhalation Move to fresh air.
Ingestion Call Poison Control Center. Never give anything by mouth to an unconscious person.
Rinse mouth with water.

5. FIRE FIGHTING MEASURES

Flash Point Not Flammable.
Suitable Extinguishing Media Use dry chemical
Special exposure hazards No data available
Special protection for fire fighters Wear appropriate self-contained breathing apparatus and protective unit
Other information No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Wear personal protective equipment
Environmental precautions No data available
Clean up methods Soak up with absorbent material. Keep in suitable closed containers for disposal.
Other information See sections 12 and 13 for additional information.

7. HANDLING AND STORAGE

Safe handling advice Avoid contact with eyes and skin. Ensure adequate ventilation.
Storage condition Keep container tightly closed in a cool dry location.
Incompatibilities No data available
Specific end uses No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Controls
Apply technical measures to comply with the occupational exposure limits.

Engineering Controls
Emergency eyewash and safety shower. Mechanical exhaust required.

Hygiene Measures
Do not eat, drink or smoke when handling product. Wash hands thoroughly after handling product. Wash contaminated clothing before reuse.

Personal Protective Equipment

Respiratory Protection: In case of insufficient ventilation wear suitable respiratory equipment.
Eye Protection: Safety glasses with side shields
Skin and body protection: Wear suitable protective clothing, protective shoes or boots.
Hand protection: Compatible chemical resistant gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES
Information on basic physical and chemical properties

| | |
|------------------------------|-------------------|
| Physical State | liquid |
| Appearance | no data available |
| Odor | no data available |
| pH | no data available |
| Water Solubility | no data available |
| Melting point/freezing point | no data available |
| Boiling point | no data available |
| Evaporation rate | no data available |
| Flammability | Not flammable |
| Flash point | no data available |
| Autoignition temperature | no data available |
| Flammability limits in air | no data available |
| Explosive properties | no data available |
| VOC content | no data available |
| Decomposition temperature | no data available |

10. STABILITY AND REACTIVITY

| | |
|---|--------------------------------|
| Stability | Stable under normal conditions |
| Conditions/Materials to avoid | No data available |
| Hazardous decomposition products | No data available |

11. TOXICOLOGICAL INFORMATION
Acute Toxicity

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated.

Potential Health Effects
Acute Toxicity

| | |
|------------|--|
| Eyes | May be harmful if contact with eyes. May cause eye irritation. |
| Skin | May be harmful if absorbed through skin. |
| Inhalation | May be harmful if inhaled. |
| Ingestion | May be harmful if swallowed. |

Chronic Effects

| | |
|-----------------------|---|
| Carcinogenic effects | No known significant effects or critical hazards. |
| Mutagenic effects | No known significant effects or critical hazards. |
| Teratogenic effects | No known significant effects or critical hazards. |
| Reproductive toxicity | No known significant effects or critical hazards. |
| Sensitization | Data not available |

12. ECOLOGICAL INFORMATION

| | |
|--------------------------------------|---|
| Ecotoxicity | The environmental impact of this product has not been fully investigated. |
| Persistence and degradability | Data not available |
| Bioaccumulation | Data not available |
| Mobility | Data not available |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Dispose of in accordance with all applicable environmental laws and regulations.

14. TRANSPORT INFORMATION

| | |
|-------------|----------------------------------|
| IATA | Not regulated as dangerous goods |
| DOT | Not regulated as dangerous goods |
| MEX | Not regulated as dangerous goods |

15. REGULATORY INFORMATION

OSHA Hazards

No known OSHA hazards

GHS Classification

Not a dangerous substance according to GHS.

U.S. Federal Regulations**SARA 302**

No chemicals in this material are subject to reporting requirements established by SARA Title III, Section 302

SARA 311/312

No SARA hazards

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals that exceed the reporting levels of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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)

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990.

U.S. State Regulations

Massachusetts Right-to-Know Components: -
New Jersey Right-to-Know Components: -
Pennsylvania Right-to-Know Components: -

California Proposition 65

This product does not contain chemicals known to the State of California to cause birth defects or other reproductive harm.

WHMIS Hazard Class

Not controlled.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

Revision date 2013-08-30

Disclaimer

The information provided on this material safety data sheet is to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Signalstain® Boost IHC Detection Reagent

Product Number 8114, 8125

Identified Uses For Research Use Only (RUO). Not intended for use in humans or animals.
Not intended for therapeutic or diagnostic procedures.

Substance/Mixture:Mixture

Supplier Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923 USA

Phone #: 1-978-867-2300

Emergency Tel# 1-978-578-6737

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

No known OSHA hazards.

GHS Classification

Not a dangerous substance according to GHS.

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

This substance is not classified as dangerous according to Directive 67/548/EEC.

Physical State

Liquid

Potential Health Effects

Acute Toxicity

| | |
|------------|--|
| Eyes | May cause eye irritation. May be harmful if contact with eyes. |
| Skin | May be harmful if absorbed through skin. |
| Inhalation | May be harmful if inhaled. |
| Ingestion | May be harmful if swallowed. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients:

Ingredients are not considered hazardous according to OSHA, GHS criteria.

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water.

| | |
|---------------------|---|
| Skin Contact | Rinse immediately with soap and plenty of water. |
| Inhalation | Move to fresh air. |
| Ingestion | Call Poison Control Center. Never give anything by mouth to an unconscious person. Rinse mouth with water. |

5. FIRE FIGHTING MEASURES

| | |
|---|---|
| Flash Point | Not Flammable. |
| Suitable Extinguishing Media | Use dry chemical |
| Special exposure hazards | No data available |
| Special protection for fire fighters | Wear appropriate self-contained breathing apparatus and protective unit |
| Other information | No data available |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Wear personal protective equipment |
| Environmental precautions | No data available |
| Clean up methods | Soak up with absorbent material. Keep in suitable closed containers for disposal. |
| Other information | See sections 12 and 13 for additional information. |

7. HANDLING AND STORAGE

| | |
|-----------------------------|--|
| Safe handling advice | Avoid contact with eyes and skin. Ensure adequate ventilation. |
| Storage condition | Keep container tightly closed in a cool dry location. |
| Incompatibilities | No data available |
| Specific end uses | No data available |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Controls

Apply technical measures to comply with the occupational exposure limits.

Engineering Controls

Emergency eyewash and safety shower. Mechanical exhaust required.

Hygiene Measures

Do not eat, drink or smoke when handling product. Wash hands thoroughly after handling product. Wash contaminated clothing before reuse.

Personal Protective Equipment

| | |
|---------------------------|--|
| Respiratory Protection: | In case of insufficient ventilation wear suitable respiratory equipment. |
| Eye Protection: | Safety glasses with side shields |
| Skin and body protection: | Wear suitable protective clothing, protective shoes or boots. |
| Hand protection: | Compatible chemical resistant gloves. |

9. PHYSICAL AND CHEMICAL PROPERTIES
Information on basic physical and chemical properties

| | |
|------------------------------|-------------------|
| Physical State | liquid |
| Appearance | no data available |
| Odor | no data available |
| pH | no data available |
| Water Solubility | no data available |
| Melting point/freezing point | no data available |
| Boiling point | no data available |
| Evaporation rate | no data available |
| Flammability | Not flammable |
| Flash point | no data available |
| Autoignition temperature | no data available |
| Flammability limits in air | no data available |
| Explosive properties | no data available |
| VOC content | no data available |
| Decomposition temperature | no data available |

10. STABILITY AND REACTIVITY

| | |
|---|--------------------------------|
| Stability | Stable under normal conditions |
| Conditions/Materials to avoid | No data available |
| Hazardous decomposition products | No data available |

11. TOXICOLOGICAL INFORMATION
Acute Toxicity

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated.

Potential Health Effects
Acute Toxicity

| | |
|------------|--|
| Eyes | May be harmful if contact with eyes. May cause eye irritation. |
| Skin | May be harmful if absorbed through skin. |
| Inhalation | May be harmful if inhaled. |
| Ingestion | May be harmful if swallowed. |

Chronic Effects

| | |
|-----------------------|---|
| Carcinogenic effects | No known significant effects or critical hazards. |
| Mutagenic effects | No known significant effects or critical hazards. |
| Teratogenic effects | No known significant effects or critical hazards. |
| Reproductive toxicity | No known significant effects or critical hazards. |
| Sensitization | Data not available |

12. ECOLOGICAL INFORMATION

| | |
|--------------------------------------|---|
| Ecotoxicity | The environmental impact of this product has not been fully investigated. |
| Persistence and degradability | Data not available |
| Bioaccumulation | Data not available |
| Mobility | Data not available |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Dispose of in accordance with all applicable environmental laws and regulations.

14. TRANSPORT INFORMATION

| | |
|-------------|----------------------------------|
| IATA | Not regulated as dangerous goods |
| DOT | Not regulated as dangerous goods |
| MEX | Not regulated as dangerous goods |

15. REGULATORY INFORMATION

OSHA Hazards

No known OSHA hazards

GHS Classification

Not a dangerous substance according to GHS.

U.S. Federal Regulations**SARA 302**

No chemicals in this material are subject to reporting requirements established by SARA Title III, Section 302

SARA 311/312

No SARA hazards

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals that exceed the reporting levels of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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)

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990.

U.S. State Regulations

Massachusetts Right-to-Know Components: -
New Jersey Right-to-Know Components: -
Pennsylvania Right-to-Know Components: -

California Proposition 65

This product does not contain chemicals known to the State of California to cause birth defects or other reproductive harm.

WHMIS Hazard Class

Not controlled.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

Revision date 2013-08-30

Disclaimer

The information provided on this material safety data sheet is to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **Signalstain® DAB Diluent, Signalstain® DAB Chromagen Concentrate**
Product Number **11724, 11725, 8059**
Identified Uses For Research Use Only (RUO). Not intended for use in humans or animals.
Not intended for therapeutic or diagnostic procedures.

Substance/Mixture: Mixture

Manufacturer/Supplier Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923 USA

Phone #: 978-867-2300

2. HAZARDS IDENTIFICATION
Emergency Overview

Harmful by inhalation, in contact with skin and if swallowed
Signalstain® DAB Diluent: R20/21/22
Signalstain® DAB Chromagen: R20/32/22-36

Physical State

Liquid

Potential Health Effects
Acute Toxicity

| | |
|------------|--|
| Eyes | May cause eye irritation |
| Skin | May be harmful if absorbed through skin. May cause skin irritation |
| Inhalation | May be harmful if inhaled. May cause irritation to mucous membranes and upper respiratory tract. |
| Ingestion | May be harmful if swallowed. |

Target organ effects no data available

Chronic Effects

| | |
|-----------------------|--------------------------|
| Carcinogenic effects | No information available |
| Mutagenic effects | No information available |
| Reproductive toxicity | No information available |
| Sensitization | No information available |

3. COMPOSITION/INFORMATION ON INGREDIENTS
Hazardous Ingredients

| Chemical Name | CAS No. | EC No. | Concentration |
|----------------------------|-----------|-----------|---------------|
| 3,3'-diaminobenzidine | 7411-49-6 | 231-018-9 | 0.65% |
| Proprietary organic liquid | - | - | 1.1% |

4. FIRST AID MEASURES

| | |
|---------------------------|--|
| Eye Contact | Rinse immediately with plenty of water for at least 15 minutes. Get medical attention. |
| Skin Contact | Rinse immediately with soap and plenty of water. Get medical attention immediately. |
| Inhalation | Move to fresh air. Get medical attention. |
| Ingestion | Never give anything by mouth to an unconscious person. Rinse mouth with water. |
| Notes to physician | Treat symptomatically. |

5. FIRE FIGHTING MEASURES

| | |
|---|--|
| Flash Point | See Section 9. Physical and Chemical Properties |
| Suitable Extinguishing Media | Use dry chemical , water spray, alcohol resistant foam or carbon dioxide. |
| Special exposure hazards | Hazardous decomposition products formed under fire conditions –toxic gases can be evolved. |
| Special protection for fire fighters | Wear self-contained breathing apparatus and protective unit |
| Other information | No data available |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Do not touch or walk through spilled material. Wear personal protective equipment. |
| Environmental precautions | Prevent further leakage or spillage if safe to do so. Do not let product enter drains. |
| Clean up methods | Pick up without creating dust. Keep in suitable closed containers for disposal. |
| Other information | See sections 12 and 13 for additional information. |

7. HANDLING AND STORAGE

| | |
|-----------------------------|--|
| Safe handling advice | Avoid contact with eyes and skin. Ensure adequate ventilation. |
| Storage conditions | Keep container tightly closed in cool dry place. |
| Incompatibilities | No data available |
| Specific end uses | No data available |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits This product contains no substances with occupation exposure limit values.

Exposure Controls
Apply technical measures to comply with the occupational exposure limits.

Engineering Controls
Emergency eyewash and safety shower. Mechanical exhaust required.

Hygiene Measures
Do not eat, drink or smoke when handling product. Wash hands thoroughly after handling product. Wash contaminated clothing before reuse.

Personal Protective Equipment

| | |
|---------------------------|--|
| Respiratory Protection: | In case of insufficient ventilation wear suitable respiratory equipment. |
| Eye Protection: | Safety glasses with side shields |
| Skin and body protection: | Wear suitable protective clothing, protective shoes or boots. |
| Hand protection: | Compatible chemical resistant gloves. |

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|------------------------------|-------------------|
| Physical State | liquid |
| Appearance | no data available |
| Odor | no data available |
| pH | no data available |
| Melting point/freezing point | no data available |
| Boiling point | no data available |
| Evaporation rate | no data available |
| Flash point | no data available |
| Autoignition temperature | no data available |
| Flammability limits in air | no data available |
| Explosive properties | no data available |
| VOC content | no data available |
| Decomposition temperature | no data available |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | no data available |
| Conditions/Materials to avoid | strong oxidizers |
| Hazardous decomposition products | carbon monoxide, carbon dioxide, nitrogen oxides |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated.

Routes of Exposure

Potential Health Effects

Acute Toxicity

| | |
|------------|--|
| Eyes | May cause eye irritation |
| Skin | May be harmful if absorbed through skin. May cause skin irritation |
| Inhalation | May be harmful if inhaled. May cause irritation to mucous membranes and upper respiratory tract. |
| Ingestion | May be harmful if swallowed. |

Target organ effects no data available

Chronic Effects

| | |
|-----------------------|--------------------------|
| Carcinogenic effects | No information available |
| Mutagenic effects | No information available |
| Reproductive toxicity | No information available |
| Sensitization | No information available |

12. ECOLOGICAL INFORMATION

| | |
|--------------------------------------|---|
| Ecotoxicity | The environmental impact of this product has not been fully investigated. |
| Persistence and degradability | No data available |
| Bioaccumulation | No data available |
| Mobility | No data available |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with all applicable environmental laws and regulations.

14. TRANSPORT INFORMATION

IATA/DOT

This product is considered non-hazardous for transport

15. REGULATORY INFORMATION

OSHA Hazards Xn Harmful

International Inventories

| | |
|---------------|---|
| TSCA | - |
| DSL/NDSL | - |
| EINECS/ELINCS | - |
| ENCS | - |
| IECSC | - |
| KECL | - |
| PICCS | - |
| AICS | - |
| NZIoC | - |

U.S. Federal Regulations

SARA 313

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

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)

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990.

U.S. State Regulations

This product does not contain any substances listed under State Right-to-Know regulations.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

WHMIS Hazard Class

Non-controlled.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

Revision date 2012-08-21

Disclaimer

The information provided on this material safety data sheet is to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **Tris Buffered Saline with Tween 20 (TBST-10X)**

Product Number 9997

Identified Uses For Research Use Only (RUO). Not intended for use in humans or animals.
Not intended for therapeutic or diagnostic procedures.

Substance/Mixture: Mixture

Supplier Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923 USA

Phone #: 1-978-867-2300

Emergency Tel# 1-978-578-6737

2. HAZARDS IDENTIFICATION

Emergency Overview**OSHA Hazards**

No known OSHA hazards.

GHS Classification

Not a dangerous substance according to GHS.
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.
This substance is not classified as dangerous according to Directive 67/548/EEC.

Physical State

Liquid

Potential Health Effects**Acute Toxicity**

| | |
|------------|--|
| Eyes | May cause eye irritation. May be harmful if contact with eyes. |
| Skin | May be harmful if absorbed through skin. |
| Inhalation | May be harmful if inhaled. |
| Ingestion | May be harmful if swallowed. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients:

Ingredients are not considered hazardous according to OSHA, GHS criteria.

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water.

| | |
|---------------------|---|
| Skin Contact | Rinse immediately with soap and plenty of water. |
| Inhalation | Move to fresh air. |
| Ingestion | Call Poison Control Center. Never give anything by mouth to an unconscious person. Rinse mouth with water. |

5. FIRE FIGHTING MEASURES

| | |
|---|---|
| Flash Point | Not Flammable. |
| Suitable Extinguishing Media | Use dry chemical |
| Special exposure hazards | No data available |
| Special protection for fire fighters | Wear appropriate self-contained breathing apparatus and protective unit |
| Other information | No data available |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Wear personal protective equipment |
| Environmental precautions | No data available |
| Clean up methods | Soak up with absorbent material. Keep in suitable closed containers for disposal. |
| Other information | See sections 12 and 13 for additional information. |

7. HANDLING AND STORAGE

| | |
|-----------------------------|--|
| Safe handling advice | Avoid contact with eyes and skin. Ensure adequate ventilation. |
| Storage condition | Keep container tightly closed in a cool dry location. |
| Incompatibilities | No data available |
| Specific end uses | No data available |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Controls

Apply technical measures to comply with the occupational exposure limits.

Engineering Controls

Emergency eyewash and safety shower. Mechanical exhaust required.

Hygiene Measures

Do not eat, drink or smoke when handling product. Wash hands thoroughly after handling product. Wash contaminated clothing before reuse.

Personal Protective Equipment

| | |
|---------------------------|--|
| Respiratory Protection: | In case of insufficient ventilation wear suitable respiratory equipment. |
| Eye Protection: | Safety glasses with side shields |
| Skin and body protection: | Wear suitable protective clothing, protective shoes or boots. |
| Hand protection: | Compatible chemical resistant gloves. |

9. PHYSICAL AND CHEMICAL PROPERTIES
Information on basic physical and chemical properties

| | |
|------------------------------|-------------------|
| Physical State | liquid |
| Appearance | no data available |
| Odor | no data available |
| pH | no data available |
| Water Solubility | no data available |
| Melting point/freezing point | no data available |
| Boiling point | no data available |
| Evaporation rate | no data available |
| Flammability | Not flammable |
| Flash point | no data available |
| Autoignition temperature | no data available |
| Flammability limits in air | no data available |
| Explosive properties | no data available |
| VOC content | no data available |
| Decomposition temperature | no data available |

10. STABILITY AND REACTIVITY

| | |
|---|--------------------------------|
| Stability | Stable under normal conditions |
| Conditions/Materials to avoid | No data available |
| Hazardous decomposition products | No data available |

11. TOXICOLOGICAL INFORMATION
Acute Toxicity

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated.

Potential Health Effects
Acute Toxicity

| | |
|------------|--|
| Eyes | May be harmful if contact with eyes. May cause eye irritation. |
| Skin | May be harmful if absorbed through skin. |
| Inhalation | May be harmful if inhaled. |
| Ingestion | May be harmful if swallowed. |

Chronic Effects

| | |
|-----------------------|---|
| Carcinogenic effects | No known significant effects or critical hazards. |
| Mutagenic effects | No known significant effects or critical hazards. |
| Teratogenic effects | No known significant effects or critical hazards. |
| Reproductive toxicity | No known significant effects or critical hazards. |
| Sensitization | Data not available |

12. ECOLOGICAL INFORMATION

| | |
|--------------------------------------|---|
| Ecotoxicity | The environmental impact of this product has not been fully investigated. |
| Persistence and degradability | Data not available |
| Bioaccumulation | Data not available |
| Mobility | Data not available |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Dispose of in accordance with all applicable environmental laws and regulations.

14. TRANSPORT INFORMATION

| | |
|-------------|----------------------------------|
| IATA | Not regulated as dangerous goods |
| DOT | Not regulated as dangerous goods |
| MEX | Not regulated as dangerous goods |

15. REGULATORY INFORMATION

OSHA Hazards

No known OSHA hazards

GHS Classification

Not a dangerous substance according to GHS.

U.S. Federal Regulations**SARA 302**

No chemicals in this material are subject to reporting requirements established by SARA Title III, Section 302

SARA 311/312

No SARA hazards

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals that exceed the reporting levels of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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)

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990.

U.S. State Regulations

Massachusetts Right-to-Know Components: -
New Jersey Right-to-Know Components: -
Pennsylvania Right-to-Know Components: -

California Proposition 65

This product does not contain chemicals known to the State of California to cause birth defects or other reproductive harm.

WHMIS Hazard Class

Not controlled.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

Revision date 2013-08-30

Disclaimer

The information provided on this material safety data sheet is to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name SignalStain® Antibody Diluent

Pure substance/preparation Substance Preparation

Identified uses **For research use only. Not for use in diagnostic procedures, Not for use in humans.**

Manufacturer
Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923
TEL: 978-867-2300

2. HAZARDS IDENTIFICATION

| | | |
|--|------------------------------|--------------------------------------|
| Emergency Overview | | |
| The product contains no substances which at their given concentration, are considered to be hazardous to health. | | |
| Appearance No information available | Physical State liquid | Odor No information available |

Potential Health Effects

Acute Toxicity

| | |
|-------------------|--|
| Eyes | May cause slight irritation. |
| Skin | No known effect based on information supplied. |
| Inhalation | No known effect based on information supplied. |
| Ingestion | No known effect based on information supplied. |

Chronic Effects

Chronic toxicity No known effect based on information supplied.

Aggravated Medical Conditions

None known.

Environmental hazard

See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

| Chemical Name | CAS-No | Weight % |
|---------------|------------|----------|
| Sodium azide | 26628-22-8 | <0.05 |

4. FIRST AID MEASURES

Eye contact Rinse immediately with plenty of water and seek medical advice.

Skin contact Rinse immediately with plenty of water and seek medical advice.

Inhalation Move to fresh air.

Ingestion Never give anything by mouth to an unconscious person. Clean mouth with water.

5. FIRE-FIGHTING MEASURES

Flammable Properties Not flammable.
Suitable Extinguishing Media Dry chemical, CO, alcohol-resistant foam or water spray.
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.

NFPA **Health Hazard** 0 **Flammability** 0 **Stability** 0 **Physical and chemical hazards** -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Avoid contact with skin, eyes and clothing.

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Prevent product from entering drains.

7. HANDLING AND STORAGE

Advice on safe handling Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice.

Technical measures/Storage conditions Keep container tightly closed. Recommended storage temperature 4 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|----------------------------|--|--|---|
| Sodium azide 26628-22-8 | Ceiling: 0.29 mg/m ³ Ceiling: 0.11 ppm | (vacated) S* (vacated) Ceiling: 0.1 ppm (vacated) Ceiling: 0.3 mg/m ³ | Ceiling: 0.1 ppm Ceiling: 0.3 mg/m ³ |

Engineering Measures Showers, eyewash stations, and ventilation systems.

Hygiene measures When using, do not eat, drink or smoke Wear suitable gloves and eye/face protection Wash hands before breaks and at the end of workday Wash hands with water as a precaution Regular cleaning of equipment, work area and clothing is recommended Avoid breathing vapors, mist or gas

Personal Protective Equipment

Respiratory protection None required under normal usage. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.

Eye/Face Protection Safety glasses with side-shields

Skin and body protection Protective gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-------------------------------------|--------------------------|
| Physical State | liquid |
| Appearance | No information available |
| Color | No information available |
| Odor | No information available |
| pH | 7.4 |
| Solubility | No information available |
| Melting point/range | No information available |
| Boiling Point/Range | No information available |
| Flash point | Not flammable. |
| Autoignition temperature | No information available |
| Flammability Limits in Air | No information available |
| Explosive properties | No information available |
| VOC Content | No information available |
| Initial Boiling Point | No information available |
| Evaporation Rate | No information available |
| Decomposition Temperature °C | No information available |

10. STABILITY AND REACTIVITY

| | |
|---|---------------------------------|
| Stability | Stable under normal conditions. |
| Conditions to Avoid | Strong acids Oxidizing agents |
| Hazardous Decomposition Products | None under normal use. |

11. TOXICOLOGICAL INFORMATION

Caution - substance not yet tested completely

Carcinogenicity There are no known carcinogenic chemicals in this product.

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Persistence and degradability No information available.

Bioaccumulation No information available.

Mobility No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with all applicable national environmental laws and regulations.

| Chemical Name | California Hazardous Waste Status |
|---------------|-----------------------------------|
| Sodium azide | Ignitable Reactive |

14. TRANSPORT INFORMATION

DOT Not regulated

MEX Not regulated

IATA Not regulated

15. REGULATORY INFORMATION

OSHA Regulatory Status

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product

International Inventories

TSCA -
DSL/NDL -
EINECS/ELINCS -
ENCS -
IECSC -
KECL -
PICCS -
AICS -
NZIoC -

U.S. Federal Regulations

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.

| Chemical Name | CAS-No | Weight % | SARA 313 - Threshold Values % |
|---------------|------------|----------|-------------------------------|
| Sodium azide | 26628-22-8 | <0.05 | 1.0 |

SARA 311/312 Hazard Categories

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

Clean Water Act

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).

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

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.

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | So |
|---------------|--------------------------|------------------------------------|----|
| 1000 lb | 1000 lb | | |

TSCA

U.S. State Regulations

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 by state right-to-know regulations.

International Regulations

Mexico - Grade

No information available.

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

Not Determined

16. OTHER INFORMATION

Revision Date: 2011-03-01

Revision Note No information available.

Disclaimer

The information provided on this MSDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text

End of Material Safety Data Sheet