

Safety Data Sheet (SDS) According to the REACH Regulation (EC) No. 1907/2006

Issuing Date: 2018-04-13

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Version: 2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product No 8059
Product name SignalStain® DAB Substrate Kit
Kit Component 11724: SignalStain® DAB Diluent
 11725: SignalStain® DAB Chromogen Concentrate

Contains

Chemical name	Index No.	CAS No
acetonitrile (50 - 60%)	608-001-00-3	75-05-8
3,3-Diaminobenzidine tetrahydrochloride hydrate - (0 - 10%)		868272-85-9
1-Imidazole (0.1-0.5)	-	288-32-4

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses For Research Use Only. Not for Use in Diagnostic Procedures.

1.3. Details of the supplier of the safety data sheet

Importer	Manufacturer
Cell Signaling Technology Europe B.V.	Cell Signaling Technology, Inc.
Dellaertweg 9b	3 Trask Lane
2316 WZ Leiden	Danvers, MA 01923
The Netherlands	United States
TEL: +31 (0)71 7200 200	TEL: +1 978 867 2300
FAX: +31 (0)71 891 0019	FAX: +1 978 867 2400

Website www.cellsignal.com
E-mail Address info@cellsignal.eu

1.4. Emergency telephone number

CHEMTREC 24 hours a day, 7 days a week, 365 days a year
 +1 703 527 3887 (INTERNATIONAL) +1 800 424 9300 (NORTH AMERICA)

Europe 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Acute oral toxicity	Category 4 - (H302)
Acute inhalation toxicity	Category 4 - (H332)
Serious eye damage/eye irritation	Category 2 - (H319)
Germ cell mutagenicity	Category 2 - (H341)
Carcinogenicity	Category 1B - (H350)
Reproductive toxicity	Category 1B - (H360)
Flammable liquids	Category 2 - (H225)

2.2. Label elements



Signal word

Danger

Hazard statement(s)

H225 - Highly flammable liquid and vapor.

H302 - Harmful if swallowed.

H332 - Harmful if inhaled.

H319 - Causes serious eye irritation.

H341 - Suspected of causing genetic defects.

H350 - May cause cancer.

H360 - May damage fertility or the unborn child.

Precautionary statement(s)

P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P210 - Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P233 - Keep container tightly closed.

P240 - Ground/Bond container and receiving equipment.

P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 - Use only non-sparking tools.

P243 - Take precautionary measures against static discharge.

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 - Wash face, hands and any exposed skin thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P271 - Use only outdoors or in a well-ventilated area.

P272 - Contaminated work clothing should not be allowed out of the workplace.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 - IF exposed or concerned: Get medical advice/attention.

P332 + P313 - If skin irritation occurs: Get medical advice/attention.

P337 + P313 - If eye irritation persists: Get medical advice/attention.

P361 - Remove/Take off immediately all contaminated clothing.

P370 + P378 - In case of fire: Use dry chemical, CO₂, water spray or regular foam to extinguish.

P405 - Store locked up.

P501 - Dispose of contents/container to an approved waste disposal plant.

P330 - Rinse mouth.

2.3. Other hazards

For the full text of the H-phrases & EUH-phrases mentioned in this Section, see Section 16

SECTION 3. Composition/information on ingredients**Kit Component 11724: SignalStain® DAB Diluent**

DANGER: May damage fertility or the unborn child.

Chemical name	CAS No	Weight-%	EC No	Classification (1272/2008)	REACH Registration Number
1-Imidazole	288-32-4	0.1-0.5	206-019-2	Acute Tox. 4 (H302) Skin Corr. 1C (H314) Repr. 1B (H360D)	no data available

Kit Component 11725: SignalStain® DAB Chromogen Concentrate

DANGER: Highly flammable liquid and vapor. Harmful if swallowed. Harmful if inhaled. Causes serious eye irritation. Suspected of causing genetic defects. May cause cancer.

Chemical name	CAS No	Weight-%	EC No	Classification (1272/2008)	REACH Registration Number
acetonitrile	75-05-8	50	200-835-2	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Eye Irrit. 2 (H319) Flam. Liq. 2 (H225)	no data available
3,3-Diaminobenzidine tetrahydrochloride hydrate	868272-85-9	2.5	-	Muta. 2 (H341) Carc. 1B (H350)	no data available

For the full text of the H-phrases & EUH-phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures**4.1. Description of first aid measures**

General advice	Use first aid treatment according to the nature of the injury. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	Move to fresh air. Get medical attention immediately if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation occurs, get medical advice/attention.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately if irritation persists.
Ingestion	Clean mouth with water and afterwards drink plenty of water. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

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. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

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

Water spray

Alcohol-resistant foam

Dry chemical

Carbon dioxide (CO₂)

Unsuitable Extinguishing Media

No information available

5.2. Special hazards arising from the substance or mixture

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

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

For emergency responders

Use personal protection recommended in Section 8.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains.

6.3. 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 (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

6.4. Reference to other sections

See Sections 8 & 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

Use as a laboratory reagent.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Chemical name	European Union	United Kingdom	France	Spain	Germany
acetonitrile	TWA 40 ppm TWA 70 mg/m ³ S*	STEL 60 ppm STEL 102 mg/m ³ STEL 15 mg/m ³ TWA 40 ppm TWA 68 mg/m ³ 5 mg/m ³ Skin	TWA 40 ppm TWA 70 mg/m ³ 5 mg/m ³ P*	TWA 40 ppm TWA 68 mg/m ³ S*	TWA: 10 ppm TWA: 17 mg/m ³ Skin Ceiling / Peak: 20 ppm Ceiling / Peak: 34 mg/m ³ Ceiling / Peak: 2 mg/m ³ TWA: 2 mg/m ³ H*
3,3-Diaminobenzidine tetrahydrochloride hydrate					Skin K2
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
acetonitrile	TWA 20 ppm TWA 35 mg/m ³ Pelle*	TWA 40 ppm TWA 70 mg/m ³ C(A4) P*	Huid* STEL 5 mg/m ³ TWA 34 mg/m ³ 1 mg/m ³	TWA 20 ppm TWA 34 mg/m ³ 1 mg/m ³ STEL 40 ppm STEL 68 mg/m ³ 5 mg/m ³ iho*	TWA 40 ppm TWA 70 mg/m ³ H*
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
acetonitrile	H* STEL 160 ppm STEL 280 mg/m ³ TWA 40 ppm TWA 70 mg/m ³	SS-C** H* TWA 20 ppm TWA 34 mg/m ³ STEL 40 ppm STEL 68 mg/m ³	TWA 70 mg/m ³ STEL 140 mg/m ³	TWA 30 ppm TWA 50 mg/m ³ 5 mg/m ³ S* STEL 45 ppm STEL 75 mg/m ³ 10 mg/m ³	TWA 40 ppm TWA 70 mg/m ³ 5 mg/m ³ STEL 120 ppm STEL 310 mg/m ³ STEL 15 mg/m ³ Skin
3,3-Diaminobenzidine tetrahydrochloride hydrate	H* A2 TWA 0.003 ppm TWA 0.03 mg/m ³				

8.2. Exposure controls**Appropriate engineering controls**

Showers, eyewash stations, and ventilation systems.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Tightly fitting safety goggles.

Skin protection

Wear protective gloves and protective clothing

Hand protection

Impervious gloves.

Other

Wear suitable protective clothing.

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment.

Environmental Exposure Controls

No information available.

SECTION 9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Information on the known physical chemical properties of each component within Kit are given below. If not included, information is either not available or not applicable. Refer to individual kit component SDS for further information.

Kit Component	11725: SignalStain® DAB Chromogen Concentrate
Physical state	Liquid
Color	Brown / Purple
Boiling point or initial boiling point and boiling range	>82 °C
Flash point	<23°C
Kit Component	11724: SignalStain® DAB Diluent
Physical state	Liquid
Appearance	Clear
Color	Colorless

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization	Hazardous polymerization does not occur.
Hazardous reactions	None under normal processing

10.4. Conditions to avoid

Extremes of temperature and direct sunlight
Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Strong oxidizing agents, Strong acids.

10.6. Hazardous decomposition products

Carbon oxides (COx)
Nitrogen oxides (NOx)

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**Product Information**

This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

Component Information

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
acetonitrile	= 2460 mg/kg (Rat) = 160 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 26.8 mg/L (Rat) 4 h = 7551 ppm (Rat) 8 h
1-Imidazole	= 220 mg/kg (Rat)	-	-

Information on likely routes of exposure

Inhalation Avoid breathing vapors or mists. May cause irritation of respiratory tract.

Eye contact Severely irritating to eyes.

Skin contact Avoid contact with skin. May cause skin irritation and/or dermatitis.

Ingestion May be harmful if swallowed.

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

Symptoms 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. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.

Skin and Eye Corrosion/Irritation No information available

Sensitization No information available

Mutagenic effects No information available.

Carcinogenic effects No information available

Reproductive toxicity No information available.

Systemic Target Organ Toxicity (STOT) No information available

Aspiration Hazard No information available.

11.2. Information on other hazards

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Product Information No information available

Component Information

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
acetonitrile	-	LC50 1600 - 1690 mg/L (Pimephales promelas) 96 h LC50 1650 mg/L (Poecilia reticulata) 96 h LC50 1850 mg/L (Lepomis macrochirus) 96 h LC50 1000 mg/L (Pimephales promelas) 96 h	EC50 5838 mg/L (Daphnia pulex) 18 h
1-Imidazole	EC50 82 mg/L (Desmodesmus subspicatus) 96 h EC50 130 mg/L (Desmodesmus subspicatus) 72 h	LC50 280 mg/L (Leuciscus idus) 48 h	EC50 341.5 mg/L (Daphnia magna) 48 h

12.2. Persistence and degradability**Kit Component**

Persistence and degradability

11725: SignalStain® DAB Chromogen Concentrate

Readily biodegradable

12.3. Bioaccumulative potential

Chemical name	Octanol-Water Partition Coefficient
acetonitrile	-0.34
1-Imidazole	-0.08

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

No information available

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Waste from residues / unused products**

Dispose of in accordance with local regulations.

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other information

Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

This material is subject to regulation as a hazardous material for shipping:

IMDG/IMO

14.1 UN number	UN1993
14.2 UN proper shipping name	Flammable Liquid, N.O.S. (Contains: acetonitrile; cyanomethane)
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazards	None
14.6 Special precautions for user	None
14.7 Maritime transport in bulk according to IMO instruments	Not regulated

ADR/RID

14.1 UN number	UN1993
14.2 UN proper shipping name	Flammable Liquid, N.O.S. (Contains: acetonitrile; cyanomethane)
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazards	None
14.6 Special precautions for user	None

IATA

14.1 UN number	UN1993
14.2 UN proper shipping name	Flammable Liquid, N.O.S. (Contains: acetonitrile; cyanomethane)
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazards	None
14.6 Special precautions for user	None

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)**

This product does not contain Substances of Very High Concern (SVHC).

SEVESO Directive Information**International inventories**

TSCA 8(b)	-
DSL/NDSL	-
EINECS/ELINCS	-
ENCS	-
IECSC	-
KECL	-
PICCS	-
AICS	-

International inventories legend

TSCA	- United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL	- Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS	- European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS	- Japan Existing and New Chemical Substances
IECSC	- China Inventory of Existing Chemical Substances
KECL	- Korean Existing and Evaluated Chemical Substances
PICCS	- Philippines Inventory of Chemicals and Chemical Substances
AICS	- Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out

SECTION 16: Other information

Full text of H-Statements referred to under Sections 2 and 3

H319 - Causes serious eye irritation

H341 - Suspected of causing genetic defects if inhaled

H350 - May cause cancer if swallowed

Classification procedure: Expert judgment and weight of evidence determination.

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.