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

Issuing Date: 2017-08-20 **Revision Date:** 2024-05-03 **Version:** 3

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

1.1. Product identifier

Product No 13296

Product name Mitochondrial Membrane Potential Assay Kit (II)

Kit Component
13472: TMRE
13550: CCCP
9808: Phosphate Buffered Saline (PBS-20X)

Hazardous Components
13472: TMRE

Contains

Chemical name	Index No.	CAS No
tetramethylrhodamine ethyl ester perchlorate (90 - 100%)	Not Listed	115532-52-0
dimethyl sulfoxide (90 - 100%)	Not Listed	67-68-5
[(3-chlorophenyl)hydrazono]malononitrile (0 - 10%)	Not Listed	555-60-2

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
Cell Signaling Technology Europe B.V.
Dellaertweg 9b
2316 WZ Leiden
The Netherlands
TEL: +31 (0)71 7200 200
FAX: +31 (0)71 891 0019

Manufacturer
Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923
United States
TEL: +1 978 867 2300
FAX: +1 978 867 2400

Website www.cellsignal.com
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

Classification and label elements described below are inclusive of all hazards of the combined kit. The most severe classifications are listed for each endpoint. Refer to individual kit component SDS for classification and label elements for each component present in the kit.

Acute oral toxicity	Category 4 - (H302)
Acute inhalation toxicity	Category 4 - (H332)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)

2.2. Label elements

Signal word
Warning

Hazard statement(s)
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.

Precautionary statement(s)
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.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P317 - IF SWALLOWED: Get medical help.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a POISON CENTER or doctor if you feel unwell.
P330 - Rinse mouth.
P332 + P313 - If skin irritation occurs: Get medical advice/attention.
P337 + P313 - If eye irritation persists: Get medical advice/attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P501 - Dispose of contents/container to an approved waste disposal plant.

2.3. Other hazards

No information available.

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 **13472: TMRE**

WARNING: Harmful if swallowed. Harmful if inhaled. Causes skin irritation. Causes serious eye irritation.

Chemical name	CAS No	Weight-%	EC No	Classification (1272/2008)	REACH Registration Number
tetramethylrhodamine ethyl ester perchlorate	115532-52-0	100	-	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H332)	no data available

Kit Component **13550: CCCP**

Chemical name	CAS No	Weight-%	EC No	Classification (1272/2008)	REACH Registration Number
dimethyl sulfoxide	67-68-5	60-100	200-664-3	-	no data available
[(3-chlorophenyl)hydrazono]malononitrile	555-60-2	0.5-1.5	209-103-7	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335)	no data available

Kit Component **9808: Phosphate Buffered Saline (PBS-20X)**

This product does not contain substances at concentrations requiring disclosure under (EC) No. 1907/2006 (REACH).

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 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. 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 if symptoms occur.

Ingestion Do NOT induce vomiting. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

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

Irritating to eyes and skin. 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 Cool containers / tanks with water spray
Use:
Dry chemical
Carbon dioxide (CO_2)
Water spray
Alcohol-resistant foam

Unsuitable Extinguishing Media No information available

5.2. Special hazards arising from the substance or mixture

Keep product and empty container away from heat and sources of ignition. Risk of ignition.

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

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

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 Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers.

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. Use only in area provided with appropriate exhaust ventilation. Ensure adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from direct sunlight.

7.3. Specific end use(s)

Use as a laboratory reagent.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit values					
Chemical name	**European Union**	**United Kingdom**	**France**	**Spain**	**Germany**
dimethyl sulfoxide					TWA: 50 ppm TWA: 160 mg/m³ Skin Ceiling / Peak: 100 ppm Ceiling / Peak: 320 mg/m³ H*
[(3-chlorophenyl)hydrazono] malononitrile		STEL 15 mg/m³ TWA 5 mg/m³ Skin	TWA 5 mg/m³ P*		Skin Ceiling / Peak: 2 mg/m³ TWA: 2 mg/m³
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
dimethyl sulfoxide				TWA 50 ppm iho*	TWA 50 ppm TWA 160 mg/m³
[(3-chlorophenyl)hydrazono] malononitrile			Huid* STEL 10 mg/m³ TWA 1 mg/m³	TWA 1 mg/m³ STEL 5 mg/m³ iho*	
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
dimethyl sulfoxide	H* TWA 50 ppm TWA 160 mg/m³	H* TWA 50 ppm TWA 160 mg/m³ STEL 100 ppm STEL 320 mg/m³			
[(3-chlorophenyl)hydrazono] malononitrile		H*		TWA 5 mg/m³ S* STEL 10 mg/m³	TWA 5 mg/m³ Skin

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 inadequate ventilation wear respiratory protection

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	**13472: TMRE**
Physical state	Solid
Appearance	Lyophilized
Color	Red

Kit Component	**13550: CCCP**
Physical state	Liquid
Color	Yellow
Odor	Sulphurous
Boiling point or initial boiling point and boiling range	189 °C (372.2 °F)
Melting point/freezing point	16 - 19 °C (60.8 - 66.2 °F)
Flash point	87 °C (188.6 °F)
Vapor pressure	0.55 hPa @ 20°C
Vapor density	2.7
Specific Gravity/Relative Density	1.1
Solubility	Completely soluble
Partition coefficient:	-2.03
Lower explosion limit	3.5%
Upper explosion limit	42%

Kit Component	**9808: Phosphate Buffered Saline (PBS-20X)**
Physical state	Liquid
Color	Colorless
pH	7.4

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 Vapors may form explosive mixtures with air 10.5. Incompatible materials

10.4. Conditions to avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

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

Product Information
Refer to kit component SDS for full toxicological 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
tetramethylrhodamine ethyl ester perchlorate	= 500 mg/kg	-	= 1.5 mg/l Dust/mist
dimethyl sulfoxide	= 14500 mg/kg (Rat) = 28300 mg/kg (Rat)	= 40 g/kg (Rat)	> 5.33 mg/L (Rat) 4 h
[(3-chlorophenyl)hydrazono]malononitrile	= 100 mg/kg (Rat)	= 300 mg/kg (Rat)	= 0.5 mg/l (Rat) Dust/mist

Information on likely routes of exposure

Inhalation

Kit Component	**13472: TMRE**
Inhalation	Harmful by inhalation

Eye contact

Kit Component	**13472: TMRE**
Eye contact	May cause slight irritation

Kit Component	**13550: CCCP**
Eye contact	May cause slight irritation

Skin contact

Kit Component	**13472: TMRE**
Skin contact	Irritating to skin

Kit Component	**13550: CCCP**
Skin contact	May be absorbed through the skin in harmful amounts

Ingestion

Kit Component	**13472: TMRE**
Ingestion	Harmful if swallowed

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

Symptoms	Irritating to eyes and skin. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.

Skin and Eye Corrosion/Irritation

Kit Component	**13472: TMRE**
Serious eye damage/eye irritation	Causes serious eye irritation
Skin corrosion/irritation	Irritating to skin

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
dimethyl sulfoxide	EC50 12350 - 25500 mg/L (Skeletonema costatum) 96 h	LC50 34000 mg/L (Pimephales promelas) 96 h LC50 41.7 g/L (Cyprinus carpio) 96 h LC50 40 g/L (Lepomis macrochirus) 96 h LC50 33 - 37 g/L (Oncorhynchus mykiss) 96 h	EC50 7000 mg/L (Daphnia species) 24 h

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

Chemical name	Octanol-Water Partition Coefficient
dimethyl sulfoxide	-2.03

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Endocrine disrupting properties

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
[(3-chlorophenyl)hydrazono]malononitrile	Group III Chemical	-	-

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

IMDG/IMO

14.1 UN number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
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 Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards None
14.6 Special precautions for user None

IATA

14.1 UN number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
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

This product does not contain substances identified in the SEVESO Directive.

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

H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H331 - Toxic if inhaled
H335 - May cause respiratory irritation

Classification procedure: Expert judgment and weight of evidence determination.
Issuing Date: 2017-08-20
Revision Date: 2024-05-03

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.