



Safety Data Sheet (SDS) According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Issuing Date: 2017-08-20

Version: 1

SECTION 1. Identification

Product identifier

Product No 12664
Product name Mitochondrial Membrane Potential Assay Kit (I)
Kit Component JC-1
CCCP
Phosphate Buffered Saline (PBS-20X)

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.
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Danvers, MA 01923
United States
TEL: +1 978 867 2300
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SECTION 2. Hazard(s) identification

Classification

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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Flammable liquids	Category 4

GHS Label elements, including precautionary statements



Signal Word
Warning

Hazard statement(s)

Combustible liquid.

Causes skin irritation. Causes serious eye irritation. .

Precautionary Statement(s)

Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep container tightly closed.

If skin irritation occurs: Get medical advice/attention. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

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.

In case of fire: Use CO₂, dry chemical, or foam for extinction.

Store in a well-ventilated place. Keep cool.

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

Supplementary Hazard Information

No information available.

Hazards not otherwise classified (HNOC)

Not applicable.

SECTION 3. Composition/information on ingredients**Kit Component Name** JC-1

Chemical Name	CAS No	Weight %	Hazardous
Benzimidazolocarbocyanine iodide, 5,5',6,6'-tetrachloro-1,1',3,3'-tetraethyl-	3520-43-2	100	Yes

Kit Component Name CCCP

Chemical Name	CAS No	Weight %	Hazardous
dimethyl sulfoxide	67-68-5	60-100	Yes
[(3-chlorophenyl)hydrazono]malononitrile	555-60-2	0.5-1.5	Yes

Kit Component Name Phosphate Buffered Saline (PBS-20X)

The product contains no substances known to be hazardous to health in concentrations which need to be taken into account

SECTION 4. First-aid measures

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 irritation persists.
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.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur.
Ingestion	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.

Most important symptoms and effects, both acute and delayed

Contains kit components which may cause the following effects, refer to individual component SDSs for full information on symptoms:

Irritating to eyes and skin.

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

Cool containers / tanks with water spray. Use: Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol-resistant foam.

Unsuitable Extinguishing Media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

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

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. Remove all sources of ignition. Take precautionary measures against static discharges. Heat, flames and sparks. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Other information

No information available.

Environmental precautions

Do not flush into surface water or sanitary sewer system. Prevention of fire and explosion. A vapor suppressing foam may be used to reduce vapors. Try to prevent the material from entering drains or water courses. Do not allow material to contaminate ground water system. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

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. Take precautionary measures against static discharges.

SECTION 7. Handling and storage

Precautions for safe handling

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Prevent the formation of vapors, mists and aerosols. There is a hazard associated with rags, paper or any other material used to remove spills which become soaked with product. Avoid accumulation of these: they are to be disposed off safely after use. Avoid static electricity build up with connection to

earth. Use only in area provided with appropriate exhaust ventilation. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from open flames, hot surfaces and sources of ignition.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions	Keep away from direct sunlight.
Packaging material	No information available.
Incompatible products	Strong oxidizing agents. Acyl, aryl, and nonmetal halides. Boron compounds. Metal salts of oxoacids.

SECTION 8. Exposure controls/personal protection

Control parameters

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL
[(3-chlorophenyl)hydrazono]malononitrile	-	TWA : 5 mg/m ³ S*	IDLH : 25 mg/m ³

Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

Individual protection measures, such as personal protective equipment

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

Eye/face protection	Tightly fitting safety goggles.
Skin and body protection	Wear protective gloves/clothing.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. Physical and chemical properties

Information on 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.

Information on basic physical and chemical properties

Kit Component	JC-1
Physical state	Solid
Appearance	Lyophilized
Color	Red

Kit Component	CCCP
Physical state	Liquid
Color	Yellow
Odor	Sulphurous
Boiling point/range (°C) VALUE	189
Boiling point/range (°F) VALUE	372.2
Melting point (°C) VALUE	16-19
Melting point/range (°F) VALUE	60.8-66.2
Flash point (°C) VALUE	87
Flash point (°F) VALUE	188.6

Vapor pressure	0.55 hPa @ 20 °C
Vapor density	2.7
Specific Gravity/Relative Density	1.1
Density	1.1 g/mL
Solubility	Soluble in water
Partition coefficient:	-2.03
Kit Component	Phosphate Buffered Saline (PBS-20X)
Physical state	Liquid
Color	Colorless
pH VALUE	7.4

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. Vapors may form explosive mixtures with air. 10.5. Incompatible materials.
Hazardous polymerization	None under normal processing.

Conditions to Avoid

Heating in air.

Incompatible Materials

Strong oxidizing agents. Acyl, aryl, and nonmetal halides. Boron compounds. Metal salts of oxoacids.

Hazardous Decomposition Products

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

SECTION 11. Toxicological information

Information on likely routes of exposure

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.

Inhalation	May cause irritation of respiratory tract.
Eye contact	Avoid contact with eyes. Contact with eyes may cause irritation.
Kit Component	CCCP
Eye contact	Severely irritating to eyes
Skin contact	.
Kit Component	CCCP

Skin contact Components of this product may be absorbed into the body through the skin. Irritating to skin

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on toxicological effects

Kit Component CCCP
ATEmix (oral) 5942 mg/kg
ATEmix (dermal) 17216 mg/kg
ATEmix (inhalation-dust/mist) 50 mg/L

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
dimethyl sulfoxide	14500 mg/kg (Rat)	40000 mg/kg (Rat)	-
[(3-chlorophenyl)hydrazono]malononitrile	= 100 mg/kg (Rat)	= 300 mg/kg (Rat)	= 0.5 mg/l (Rat) Dust/mist

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

Symptoms Contains kit components which may cause the following effects, refer to individual component SDSs for full information on symptoms:

Irritating to eyes and skin.

Skin and Eye Corrosion/Irritation

Kit Component CCCP
Skin corrosion/irritation Irritating to skin
Serious eye damage/eye irritation Causes serious eye irritation

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.

Systemic Target Organ Toxicity (STOT) No information available

Kit Component CCCP
Other adverse effects [(3-chlorophenyl)hydrazono]malonitrile is a suspected endocrine disruptor.

Aspiration Hazard No information available.

SECTION 12. Ecological information

Ecotoxicity

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

Persistence and degradability No information available.

Bioaccumulation No information available.

Chemical Name	Octanol-Water Partition Coefficient
dimethyl sulfoxide	-2.03

Mobility No information available

Other adverse effects

No information available.

SECTION 13. Disposal considerations

Waste Disposal Methods

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

Disposal considerations

Do not empty into drains; dispose of this material and its container in a safe way.

SECTION 14. Transport information

This material is not subject to regulation as a hazardous material for shipping.

SECTION 15. Regulatory information

North American Inventory Listing

Chemical Name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
dimethyl sulfoxide	Listed	Not Listed	Listed	Not Listed
[(3-chlorophenyl)hydrazono]malononitrile	Listed	Not Listed	Not Listed	Listed

SARA 313

Refer to kit component SDS for full SARA Section 313 reporting requirements.

Chemical Name	CAS No	SARA 313 - Threshold Values %
[(3-chlorophenyl)hydrazono]malononitrile	555-60-2	1.0

SARA 311/312 Hazard Categories

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

Clean Water Act

Refer to kit component SDS for full Clean Water Act (CWA) reporting requirements.

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances	CWA - Bioaccumulative Chemicals of Concern (BCCs)
[(3-chlorophenyl)hydrazono]malononitrile	Not Listed	Listed	Listed	Not Listed	Not Listed

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

Refer to kit component SDS for applicable State Right-To-Know (RTK) information.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
dimethyl sulfoxide	Listed	Not Listed	Not Listed
[(3-chlorophenyl)hydrazono]malononitrile	Listed	Not Listed	Listed
disodium hydrogenorthophosphate	Listed	Listed	Listed

SECTION 16. Other information

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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.

End of Safety Data Sheet