




SAFETY DATA SHEET

1. Identification

Product identifier	CycLex® AMPK Kinase Assay Kit 20X DTT
Other means of identification	
Product code	CY-1182
Recommended use	Research use only.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Manufacturer and Supplier (Asia)	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
Telephone number	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
Fax	+81-52-238-1440
E-mail	sds-support@mbi.co.jp
URL	http://www.mbl.co.jp/e/index.html
Contact person	SDS Support
Supplier	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
Telephone number	+1-800-200-5459, option 3
Fax	+1-781-939-6963
E-mail	tech@mblintl.com
URL	http://www.mblintl.com/
Contact person	Technical Service

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure (respiratory tract irritation)	Category 3
OSHA hazard(s)	Not classified.	
Label elements		
Hazard symbol		
Signal word	Warning	
Hazard statement	Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.	
Precautionary statement		
Prevention	Avoid breathing mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.	
Response	IF SWALLOWED: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention. 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.	
Storage	Store in a well-ventilated place. Keep container tightly closed.	
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.	

Hazard(s) not otherwise classified (HNOC) None.

3. Composition/Information on ingredients

Mixtures

Chemical name	CAS number	%
D,L-Dithiothreitol (DTT)	3483-12-3 27565-41-9	≥ 99%

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move injured person into fresh air and keep person calm under observation –Get medical attention if any discomfort continues.
Skin contact	Take off immediately all contaminated clothing. Flush skin thoroughly with water. Get medical attention if irritation persists after washing.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove any contact lenses and open eyelids wide apart. Continue rinsing. Get medical attention if irritation persists after washing.
Ingestion	Rinse mouth thoroughly if dust is ingested. Only induce vomiting at the instruction of medical personnel. Get medical attention if any discomfort continues.
Most important symptoms/effects, acute and delayed	Cough. Symptoms can include irritation, redness, scratching of the cornea, and tearing. May cause irritation through mechanical abrasion. Swallowing may cause gastrointestinal irritation.
Indication of immediate medical attention and special treatment needed	Get medical attention if any discomfort develops.
General information	First aid personnel must be aware of own risk during rescue.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Dust may form explosive mixture with air. By heating and fire, toxic vapors/gases may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for fire-fighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/instructions	Use standard fire-fighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid inhalation of spray mist and contact with skin and eyes. Wear appropriate personal protective equipment.
Methods and materials for containment and cleaning up	Absorb spillage with non-combustible, absorbent material. Collect in containers and seal securely.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid inhalation of spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. Wash hands after handling. Observe good industrial hygiene
Conditions for safe storage, including any incompatibilities	Keep container closed. Do not store near heat sources or expose to high temperatures. Protect from direct sunlight.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Provide adequate ventilation and minimize the risk of inhalation of vapors and mists. Provide easy access to water supply and eye wash facilities.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear approved chemical safety goggles.
Skin protection	
Hand protection	Use suitable protective gloves if risk of skin contact. Nitrile gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear protective clothing appropriate for the risk of exposure.
Respiratory protection	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment with combination filter.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Powder.
Color	White.
Odor	Unpleasant odor.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	41 - 44 °C.
Initial boiling point and boiling range	Not available.
Flash point	113 °C - closed cup.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Soluble in water.
Partition coefficient (n-octanol/water)	log Pow: 0.05
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	Reacts violently with strong bases.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Dust may form explosive mixture with air.
Conditions to avoid	Sunlight. Heat. Freezing.
Incompatible materials	Oxidizing agents. Strong bases.

Hazardous decomposition products Carbon dioxide. Carbon monoxide. Sulfur dioxide.

11. Toxicological information

Information on likely routes of exposure

Ingestion May cause discomfort if swallowed. Ingestion may cause nausea, headache and dizziness.
Inhalation Vapors irritate the respiratory system, and may cause coughing and difficulties in breathing.
Skin contact Causes skin irritation.
Eye contact Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics Cough. Symptoms can include irritation, redness, scratching of the cornea, and tearing. May cause irritation through mechanical abrasion. Swallowing may cause gastrointestinal irritation.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Components	Species	Test Results
D,L-Dithiothreitol (DTT) (CAS3483-12-3, 27565-41-9)		
Acute		
<i>Oral</i>	LD50 Rat	400 mg/kg

Skin corrosion/irritation Causes skin irritation.
Serious eye damage/eye irritation Causes serious eye irritation.
Respiratory sensitization No data available.
Skin sensitization No data available.
Germ cell mutagenicity No data available.
Carcinogenicity No data available.
Reproductive toxicity No data available.
Specific target organ toxicity - single exposure May cause respiratory irritation.
Specific target organ toxicity - repeated exposure No data available.
Aspiration hazard No data available.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills have a harmful or damaging effect on the environment.

Components	Species	Test Results
D,L-Dithiothreitol (DTT) (CAS 3483-12-3, 27565-41-9)		
Aquatic		
Crustacea	LC50 Water flea (<i>Daphnia magna</i>)	24 - 30 mg/L, 48 hours

Persistence and degradability No data available.
Bioaccumulative potential No data available.
Mobility in soil This product is water soluble and may disperse in soil.
Mobility in general The product is water soluble and may spread in water systems.
Other adverse effects None known.

13. Disposal considerations

Disposal instructions Dispose of in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.
Local disposal regulations Dispose of in accordance with local regulations.
Hazardous waste code Not regulated.
Waste from residues / unused products Dispose of in accordance with local regulations.
Contaminated packaging Dispose of in same manner as unused product.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is hazardous according to OSHA 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)		Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)		Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories		Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance		No
SARA 311/312 Hazardous chemical		Yes
SARA 313 (TRI reporting)		Not regulated.
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List		Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)		Not regulated.
Safe Drinking Water Act (SDWA)		Not regulated.
US state regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.	
Massachusetts RTK - Substance List		Not regulated.
New Jersey Worker and Community Right-to-Know Act		Not regulated.
Pennsylvania RTK - Hazardous Substances		Not regulated.
Rhode Island RTK		Not regulated.
California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)		Not listed.
International Inventories		
Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	EC Inventory	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).		

16. Other information

Issue date	01/30/2016
Revision date	09/30/2016
Version	10

List of abbreviations

LC50: Lethal Concentration, 50%.
LD50: Lethal Dose, 50%.

Further information

Not available.

References

AQUIRE
ECHA C&L Inventory database

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.




SAFETY DATA SHEET

1. Identification

Product identifier	CycLex® AMPK Kinase Assay Kit Stop Solution
Other means of identification	
Product code	CY-1182
Recommended use	Research use only.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Manufacturer and Supplier (Asia)	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
Telephone number	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
Fax	+81-52-238-1440
E-mail	sds-support@mbi.co.jp
URL	http://www.mbl.co.jp/e/index.html
Contact person	SDS Support
Supplier	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
Telephone number	+1-800-200-5459, option 3
Fax	+1-781-939-6963
E-mail	tech@mblintl.com
URL	http://www.mblintl.com/
Contact person	Technical Service

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
OSHA hazard(s)	Not classified.	
Label elements		
Hazard symbol		
Signal word	Danger	
Hazard statement	Causes severe skin burns and eye damage.	
Precautionary statement		
Prevention	Do not breathe dust or mist. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling.	
Response	IF SWALLOWED: Rinse mouth. Do not induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.	
Storage	Store locked up.	
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.	
Hazard(s) not otherwise classified (HNOC)	None.	

3. Composition/Information on ingredients

Mixtures

Chemical name	CAS number	%
Sulfuric acid	7664-93-9	< 10

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move injured person into fresh air and keep person calm under observation. If breathing is difficult, trained personnel should give oxygen. Get medical attention if any discomfort continues.
Skin contact	Take off immediately all contaminated clothing. Flush skin thoroughly with water. Get medical attention immediately. Chemical burns must be treated by a physician.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove any contact lenses and open eyelids wide apart. Continue rinsing. Get medical attention immediately.
Ingestion	Rinse mouth thoroughly. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Get medical attention if any discomfort continues.
Most important symptoms/ effects, acute and delayed	Burning pain and severe corrosive skin damage. Extreme irritation of eyes and mucous membranes, including burning and tearing.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	First aid personnel must be aware of own risk during rescue.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	By heating and fire, harmful vapors/gases may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/ instructions	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid inhalation of spray mist and contact with skin and eyes. Wear appropriate personal protective equipment.
Methods and materials for containment and cleaning up	Absorb spillage with non-combustible, absorbent material. Collect in containers and seal securely.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid inhalation of spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. Wash hands after handling. Observe good industrial hygiene
Conditions for safe storage, including any incompatibilities	Keep container closed. Do not store near heat sources or expose to high temperatures. Protect from direct sunlight.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sulfuric acid (CAS 7664-93-9)	PEL	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sulfuric acid (CAS 7664-93-9)	REL	1 mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Provide easy access to water supply and eye wash facilities.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear approved chemical safety goggles.
Skin protection	
Hand protection	Use suitable protective gloves if risk of skin contact. Butyl rubber gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear protective clothing appropriate for the risk of exposure.
Respiratory protection	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. Chemical respirator with acid gas cartridge.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	Reacts violently with strong bases.
Chemical stability	Stable under normal temperature conditions.

Possibility of hazardous reactions	This product may react with reducing agents.
Conditions to avoid	Sunlight. Heat. Freezing.
Incompatible materials	Reducing agents. Alkalis. Metals.
Hazardous decomposition products	Sulfur dioxide.

11. Toxicological information

Information on likely routes of exposure

Ingestion May cause discomfort if swallowed. Ingestion may cause nausea, headache and dizziness.

Inhalation Spray mists may cause respiratory tract irritation.

Skin contact Causes skin burns.

Eye contact Causes severe eye burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Extreme irritation of eyes and mucous membranes, including burning and tearing.

Information on toxicological effects

Acute toxicity Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

Components	Species	Test Results
Sulfuric acid (CAS 7664-93-9)		
Acute		
<i>Oral</i>	LD50	Rat 2,140 mg/kg

Skin corrosion/irritation Causes severe skin burns.

Serious eye damage/eye irritation Causes eye burns.

Respiratory sensitization No data available.

Skin sensitization No data available.

Germ cell mutagenicity No data available.

Carcinogenicity Exposure to strong inorganic acid mists containing sulfuric acid has been classified as carcinogenic to humans. The information located is insufficient to conclude that sulfuric acid itself is a carcinogen.

Reproductive toxicity No data available.

Specific target organ toxicity No data available.

- single exposure

Specific target organ toxicity No data available.

- repeated exposure

Aspiration hazard No data available.

12. Ecological information

Ecotoxicity Large amounts of the product may affect the acidity (pH-factor) in water with possible risk of harmful effects to aquatic organisms.

Components	Species	Test Results
Sulfuric acid (CAS 7664-93-9)		
Aquatic		
Fish	LC50	Western mosquitofish (<i>Gambusia affinis</i>) 42 mg/L, 96 hours

Persistence and degradability No data available.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Mobility in general The product is water soluble and may spread in water systems.

Other adverse effects None known.

13. Disposal considerations

Disposal instructions Dispose of in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.

Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	D002: Corrosive waste
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in same manner as unused product.

14. Transport information

DOT

UN number	UN2796
UN proper shipping name	Sulphuric acid solution
Transport hazard class(es)	8
Subsidiary class(es)	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Labels required	8
Special provisions	A3, A7, B2, B15, IB2, N6, N34, T8, TP2, TP12
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN2796
UN proper shipping name	Sulphuric acid solution
Transport hazard class(es)	8
Subsidiary class(es)	-
Packaging group	II
Environmental hazards	No
Labels required	8
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN2796
UN proper shipping name	Sulphuric acid solution
Transport hazard class(es)	8
Subsidiary class(es)	-
Packaging group	II
Environmental hazards	
Marine pollutant	No
Labels required	8
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations	This product is not hazardous according to OSHA 29CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.		
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)			Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)			Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)	Sulfuric acid (CAS 7664-93-9)		Listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)			

Hazard categories

Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

No

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Sulfuric acid
(CAS 7664-93-9)

Safe Drinking Water Act (SDWA)

Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential
Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical
Code Number

Sulfuric acid (CAS 7664-93-9) 6552

Drug Enforcement Administration (DEA). List 1 & 2 Exempt
Chemical Mixtures (21 CFR 1310.12(c))

Sulfuric acid (CAS 7664-93-9) 20%W/V

DEA Exempt Chemical Mixtures Code Number

Sulfuric acid (CAS 7664-93-9) 6552

US state regulations

WARNING: This product contains a chemical known to the State of California to cause

Massachusetts RTK - Substance List

Sulfuric acid (CAS 7664-93-9)

New Jersey Worker and Community Right-to-Know Act

Sulfuric acid (CAS 7664-93-9) 500 lbs

Pennsylvania RTK - Hazardous Substances

Sulfuric acid (CAS 7664-93-9)

Rhode Island RTK

Sulfuric acid (CAS 7664-93-9)

California Proposition 65 - Carcinogens & Reproductive Toxicity
(CRT)

Sulfuric acid (CAS 7664-93-9)

International Inventories

Country(s) or region

Inventory name

On inventory (yes/no)*

Australia

Australian Inventory of Chemical Substances (AICS)

Yes

Canada

Domestic Substances List (DSL)

Yes

Canada

Non-Domestic Substances List (NDSL)

No

China

Inventory of Existing Chemical Substances in China (IECSC)

Yes

Europe

EC Inventory

Yes

Japan

Inventory of Existing and New Chemical Substances (ENCS)

Yes

Korea

Existing Chemicals List (ECL)

Yes

New Zealand

New Zealand Inventory

Yes

Philippines

Philippine Inventory of Chemicals and Chemical Substances (PICCS)

Yes

United States & Puerto Rico

Toxic Substances Control Act (TSCA) Inventory

Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date

01/30/2016

Revision date

09/30/2016

Version

10

List of abbreviations

LC50: Lethal Concentration, 50%.
LD50: Lethal Dose, 50%.

Further information

Not available.

References

IUCLID (2000)
RTECS (2006, 2008)

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



SAFETY DATA SHEET

1. Identification

Product identifier	CycLex® AMPK Kinase Assay Kit 10X Wash Buffer, Kinase Buffer
Other means of identification	
Product code	CY-1182
Recommended use	Research use only.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Manufacturer and Supplier (Asia)	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
Telephone number	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
Fax	+81-52-238-1440
E-mail	sds-support@mbi.co.jp
URL	http://www.mbl.co.jp/e/index.html
Contact person	SDS Support
Supplier	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
Telephone number	+1-800-200-5459, option 3
Fax	+1-781-939-6963
E-mail	tech@mblintl.com
URL	http://www.mblintl.com/
Contact person	Technical Service

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA hazard(s)	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	None.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash thoroughly after handling.
Storage	None.
Disposal	None.
Hazard(s) not otherwise classified (HNOC)	None.

3. Composition/Information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

4. First-aid measures

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Remove contaminated clothing. Dry skin with paper towel or similar. Get medical attention if irritation develops or persists.
Eye contact	Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops or persists.

Ingestion	No adverse effects due to ingestion are expected. Get medical attention if any discomfort occurs.
Most important symptoms/ effects, acute and delayed	Dry skin.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Get medical attention if any discomfort develops.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	None known.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/ instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	The product is non-combustible.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid prolonged and repeated contact. Wear suitable protective clothing. For personal protection, see Section 8 of the SDS.
Methods and materials for containment and cleaning up	Absorb spillage with non-combustible, absorbent material. After removal, flush contaminated area thoroughly with water. For waste disposal, see Section 13 of the SDS.
Environmental precautions	Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling	Avoid prolonged and repeated contact. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Keep container closed.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Provide adequate ventilation.
Individual protection measures, such as personal protective equipment	
Eye/face protection	If risk of splashing, wear safety goggles or face shield.
Skin protection	
Hand protection	Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear protective gloves. Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	No protection is ordinarily required under normal conditions of use.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit	Not available.
- lower (%)	
Flammability limit	Not available.
- upper (%)	
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	None known.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	No hazard in normal industrial use.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Large quantities: May cause discomfort if swallowed.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Dry skin.

Information on toxicological effects

Acute toxicity	Large quantities: May cause discomfort if swallowed.
Skin corrosion/irritation	Prolonged contact may cause dryness of the skin.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	No data available.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.

Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	No data available.

12. Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills have a harmful or damaging effect on the environment.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Mobility in general	The product is water soluble and may spread in water systems.
Other adverse effects	No data available.

13. Disposal considerations

Disposal instructions	Dispose of in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in same manner as unused product.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is not hazardous according to OSHA 29CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)		Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)		Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories		Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance		No
SARA 311/312 Hazardous chemical		No
SARA 313 (TRI reporting)		Not regulated.
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List		Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)		Not regulated.
Safe Drinking Water Act (SDWA)		Not regulated.
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number		Not listed.
Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))		Not regulated.

DEA Exempt Chemical Mixtures Code Number
Food and Drug Administration (FDA)

Not regulated.

Not regulated.

US state regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Massachusetts RTK - Substance List

Not regulated.

New Jersey Worker and Community Right-to-Know Act

Not regulated.

Pennsylvania RTK - Hazardous Substances

Not regulated.

Rhode Island RTK

Not regulated.

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	EC Inventory	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date 01/30/2016

Revision date 09/30/2016

Version 10

Further information Not available.

Disclaimer This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



SAFETY DATA SHEET

1. Identification

Product identifier	CycLex® AMPK Kinase Assay Kit 20X ATP
Other means of identification	
Product code	CY-1182
Recommended use	Research use only.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Manufacturer and Supplier (Asia)	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
Telephone number	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
Fax	+81-52-238-1440
E-mail	sds-support@mbl.co.jp
URL	http://www.mbl.co.jp/e/index.html
Contact person	SDS Support
Supplier	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
Telephone number	+1-800-200-5459, option 3
Fax	+1-781-939-6963
E-mail	tech@mblintl.com
URL	http://www.mblintl.com/
Contact person	Technical Service

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA hazard(s)	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	None.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash thoroughly after handling.
Storage	None.
Disposal	None.
Hazard(s) not otherwise classified (HNOC)	None.

3. Composition/Information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

4. First-aid measures

Inhalation	Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.
Skin contact	Wash contact areas with soap and water. Get medical attention if irritation develops or persists.
Eye contact	Do not rub eye. Rinse the eye with water immediately. Make sure to remove any contact lenses from the eyes before rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort continues.

Most important symptoms/ effects, acute and delayed	Dry skin.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Get medical attention if any discomfort develops.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	None known.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/ instructions	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid prolonged and repeated contact. Wear suitable protective clothing. For personal protection, see Section 8 of the SDS.
Methods and materials for containment and cleaning up	Sweep up or vacuum up spillage and collect in suitable container for disposal. After removal, flush contaminated area thoroughly with water. Never return spills to original containers for re-use.
Environmental precautions	Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling	Avoid prolonged and repeated contact. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Keep container closed.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Provide adequate ventilation. Minimize dust generation and accumulation. Provide easy access to water supply and eye wash facilities.
Individual protection measures, such as personal protective equipment	
Eye/face protection	If risk of splashing, wear safety goggles or face shield.
Skin protection	
Hand protection	Wear protective gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear protective gloves. Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	No protection is ordinarily required under normal conditions of use.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Powder.

Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit	Not available.
- lower (%)	
Flammability limit	Not available.
- upper (%)	
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	None known.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	No hazard in normal industrial use.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Large quantities: May cause discomfort if swallowed.
Inhalation	Dust may irritate respiratory system.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Dry skin.

Information on toxicological effects

Acute toxicity	Large quantities: May cause discomfort if swallowed.
Skin corrosion/irritation	Prolonged contact may cause dryness of the skin.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	No data available.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	No data available.

Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	No data available.

12. Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills have a harmful or damaging effect on the environment.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Mobility in general	The product is water soluble and may spread in water systems.
Other adverse effects	No data available.

13. Disposal considerations

Disposal instructions	Dispose of in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in same manner as unused product.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is not hazardous according to OSHA 29CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)		Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)		Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories		Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance		No
SARA 311/312 Hazardous chemical		No
SARA 313 (TRI reporting)		Not regulated.
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List		Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)		Not regulated.
Safe Drinking Water Act (SDWA)		Not regulated.
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number		Not listed.
Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))		Not regulated.
DEA Exempt Chemical Mixtures Code Number		Not regulated.
Food and Drug Administration (FDA)		Not regulated.

US state regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
Massachusetts RTK - Substance List	Not regulated.
New Jersey Worker and Community Right-to-Know Act	Not regulated.
Pennsylvania RTK - Hazardous Substances	Not regulated.
Rhode Island RTK	Not regulated.
California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)	Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	EC Inventory	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	01/30/2016
Revision date	09/30/2016
Version	10
Further information	Not available.
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



SAFETY DATA SHEET

1. Identification

Product identifier	CycLex® AMPK Kinase Assay Kit Microplate
Other means of identification	
Product code	CY-1182
Recommended use	Research use only.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Manufacturer and Supplier (Asia)	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
Telephone number	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
Fax	+81-52-238-1440
E-mail	sds-support@mbi.co.jp
URL	http://www.mbl.co.jp/e/index.html
Contact person	SDS Support
Supplier	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
Telephone number	+1-800-200-5459, option 3
Fax	+1-781-939-6963
E-mail	tech@mblintl.com
URL	http://www.mblintl.com/
Contact person	Technical Service

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA hazard(s)	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	None.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash thoroughly after handling.
Storage	None.
Disposal	None.
Hazard(s) not otherwise classified (HNOC)	None.

3. Composition/Information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

4. First-aid measures

Inhalation	Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.
Skin contact	Wash contact areas with soap and water. Get medical attention if irritation develops or persists.
Eye contact	Do not rub eye. Rinse the eye with water immediately. Make sure to remove any contact lenses from the eyes before rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort continues.

Most important symptoms/ effects, acute and delayed	Dry skin.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Get medical attention if any discomfort develops.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	None known.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/ instructions	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid prolonged and repeated contact. Wear suitable protective clothing. For personal protection, see Section 8 of the SDS.
Methods and materials for containment and cleaning up	Sweep up or vacuum up spillage and collect in suitable container for disposal. After removal, flush contaminated area thoroughly with water. Never return spills to original containers for re-use.
Environmental precautions	Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling	Avoid prolonged and repeated contact. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Keep container closed.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Provide adequate ventilation.
Individual protection measures, such as personal protective equipment	
Eye/face protection	If risk of splashing, wear safety goggles or face shield.
Skin protection	
Hand protection	Wear protective gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear protective gloves. Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	No protection is ordinarily required under normal conditions of use.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Solid.

Color	Colorless.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit	Not available.
- lower (%)	
Flammability limit	Not available.
- upper (%)	
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Not available.
Partition coefficient	Not available.
(<i>n</i>-octanol/water)	
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	None known.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	No hazard in normal industrial use.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Large quantities: May cause discomfort if swallowed.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms related to the physical, chemical and toxicological characteristics

Information on toxicological effects

Acute toxicity	Large quantities: May cause discomfort if swallowed.
Skin corrosion/irritation	Prolonged contact may cause dryness of the skin.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	No data available.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.
Specific target organ toxicity	No data available.
- single exposure	

Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	No data available.

12. Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills have a harmful or damaging effect on the environment.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Mobility in general	The product is water soluble and may spread in water systems.
Other adverse effects	No data available.

13. Disposal considerations

Disposal instructions	Dispose of in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in same manner as unused product.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is not hazardous according to OSHA 29CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)		Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)		Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories		Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance		No
SARA 311/312 Hazardous chemical		No
SARA 313 (TRI reporting)		Not regulated.
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List		Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)		Not regulated.
Safe Drinking Water Act (SDWA)		Not regulated.
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number		Not listed.
Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))		Not regulated.
DEA Exempt Chemical Mixtures Code Number		Not regulated.
Food and Drug Administration (FDA)		Not regulated.

US state regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
Massachusetts RTK - Substance List	Not regulated.
New Jersey Worker and Community Right-to-Know Act	Not regulated.
Pennsylvania RTK - Hazardous Substances	Not regulated.
Rhode Island RTK	Not regulated.
California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)	Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	EC Inventory	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	01/30/2016
Revision date	09/30/2016
Version	10
Further information	Not available.
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



SAFETY DATA SHEET

1. Identification

Product identifier	CycLex® AMPK Kinase Assay Kit HRP conjugated Anti-mouse IgG
Other means of identification	
Product code	CY-1182
Recommended use	Research use only.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Manufacturer and Supplier (Asia)	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
Telephone number	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
Fax	+81-52-238-1440
E-mail	sds-support@mbi.co.jp
URL	http://www.mbl.co.jp/e/index.html
Contact person	SDS Support
Supplier	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
Telephone number	+1-800-200-5459, option 3
Fax	+1-781-939-6963
E-mail	tech@mblintl.com
URL	http://www.mblintl.com/
Contact person	Technical Service

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA hazard(s)	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	None.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	None.
Disposal	None.
Hazard(s) not otherwise classified (HNOC)	None.

3. Composition/Information on ingredients

Mixtures

Chemical name	CAS number	%
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	55965-84-9	< 0.1

Composition comments	All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
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4. First-aid measures

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
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Skin contact	Remove contaminated clothing. Dry skin with paper towel or similar. Get medical attention if irritation develops or persists.
Eye contact	Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops or persists.
Ingestion	Drink plenty of water. Get medical attention if any discomfort occurs.
Most important symptoms/ effects, acute and delayed	Dry skin.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Get medical attention if any discomfort develops.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	None known.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.
Fire-fighting equipment/ instructions	Move containers from fire area if you can do that without risk. Use water spray to cool unopened containers. Prevent entry to sewers and public waters.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid contact with eyes and prolonged skin contact. For personal protection, see Section 8 of the SDS.
Methods and materials for containment and cleaning up	Absorb spillage with suitable absorbent material. Flush contaminated area thoroughly with water, following removal of the spillage. For waste disposal, see Section 13 of the SDS.
Environmental precautions	Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling	Avoid contact with eyes and prolonged skin contact. Wash hands after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Ensure adequate ventilation is available, especially in confined areas.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Risk of splashes: Wear safety glasses with side shields.
Skin protection	
Hand protection	Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	Where excessive vapor, mist or dust may result, use NIOSH approved respiratory protection equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Pale blue.
Odor	Odorless.
Odor threshold	Not available.
pH	Neutral.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit	Not available.
- lower (%)	
Flammability limit	Not available.
- upper (%)	
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur. Hazardous reactions do not occur.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	None known.

11. Toxicological information**Information on likely routes of exposure**

Ingestion	Large quantities: May cause discomfort if swallowed.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms related to the physical, chemical and toxicological characteristics

Information on toxicological effects

Acute toxicity	Large quantities: May cause discomfort if swallowed.
Skin corrosion/irritation	May cause mild skin irritation.
Serious eye damage/eye	May cause eye irritation.
Respiratory sensitization	No data available.
Skin sensitization	No data available.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.

Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	No data available.

12. Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills have a harmful or damaging effect on the environment.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	Expected to be highly mobile in soil.
Mobility in general	The product is water soluble and may spread in water systems.
Other adverse effects	No data available.

13. Disposal considerations

Disposal instructions	Dispose of in accordance with all applicable regulations. Do not discharge into drains, water
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in same manner as unused product.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is not hazardous according to OSHA 29CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)		Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)		Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No	
SARA 302 Extremely hazardous substance		No
SARA 311/312 Hazardous chemical		No
SARA 313 (TRI reporting)		Not regulated.
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List		Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)		Not regulated.
Safe Drinking Water Act (SDWA)		Not regulated.
Food and Drug Administration (FDA)		Not regulated.
US state regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.	
Massachusetts RTK - Substance List		Not regulated.
New Jersey Worker and Community Right-to-Know Act		Not regulated.

Pennsylvania RTK - Hazardous Substances

Not regulated.

Rhode Island RTK

Not regulated.

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)

Not listed.

International inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	EC Inventory	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	01/30/2016
Revision date	09/30/2016
Version	10
Further information	Not available.
References	HSDB® - Hazardous Substances Data Bank Registry of Toxic Effects of Chemical Substances (RTECS) C&L Inventory database
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



SAFETY DATA SHEET

1. Identification

Product identifier	CycLex® AMPK Kinase Assay Kit Anti-Phospho-mouse IRS-1 S789 Monoclonal Antibody
Other means of identification	
Product code	CY-1182
Recommended use	Research use only.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Manufacturer and Supplier (Asia)	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
Telephone number	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
Fax	+81-52-238-1440
E-mail	sds-support@mbi.co.jp
URL	http://www.mbl.co.jp/e/index.html
Contact person	SDS Support
Supplier	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
Telephone number	+1-800-200-5459, option 3
Fax	+1-781-939-6963
E-mail	tech@mblintl.com
URL	http://www.mblintl.com/
Contact person	Technical Service

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA hazard(s)	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	None.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	None.
Disposal	None.
Hazard(s) not otherwise classified (HNOC)	None.

3. Composition/Information on ingredients

Mixtures

Chemical name	CAS number	%
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	55965-84-9	< 0.1

Composition comments	All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
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4. First-aid measures

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
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Skin contact	Remove contaminated clothing. Dry skin with paper towel or similar. Get medical attention if irritation develops or persists.
Eye contact	Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops or persists.
Ingestion	Drink plenty of water. Get medical attention if any discomfort occurs.
Most important symptoms/ effects, acute and delayed	Dry skin.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Get medical attention if any discomfort develops.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	None known.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.
Fire-fighting equipment/ instructions	Move containers from fire area if you can do that without risk. Use water spray to cool unopened containers. Prevent entry to sewers and public waters.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid contact with eyes and prolonged skin contact. For personal protection, see Section 8 of the SDS.
Methods and materials for containment and cleaning up	Absorb spillage with suitable absorbent material. Flush contaminated area thoroughly with water, following removal of the spillage. For waste disposal, see Section 13 of the SDS.
Environmental precautions	Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling	Avoid contact with eyes and prolonged skin contact. Wash hands after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Ensure adequate ventilation is available, especially in confined areas.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Risk of splashes: Wear safety glasses with side shields.
Skin protection	
Hand protection	Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	Where excessive vapor, mist or dust may result, use NIOSH approved respiratory protection equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Odorless.
Odor threshold	Not available.
pH	Neutral.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit	Not available.
- lower (%)	
Flammability limit	Not available.
- upper (%)	
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Soluble in water
Partition coefficient (<i>n</i> -octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur. Hazardous reactions do not occur.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	None known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Large quantities: May cause discomfort if swallowed.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the	Dry skin.

Symptoms related to the physical, chemical and toxicological characteristics

Information on toxicological effects

Acute toxicity	Large quantities: May cause discomfort if swallowed.
Skin corrosion/irritation	May cause mild skin irritation.
Serious eye damage/eye	May cause eye irritation.
Respiratory sensitization	No data available.
Skin sensitization	No data available.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.

Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	No data available.

12. Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills have a harmful or damaging effect on the environment.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	Expected to be highly mobile in soil.
Mobility in general	The product is water soluble and may spread in water systems.
Other adverse effects	No data available.

13. Disposal considerations

Disposal instructions	Dispose of in accordance with all applicable regulations. Do not discharge into drains, water
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in same manner as unused product.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is not hazardous according to OSHA 29CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)		Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)		Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No	
SARA 302 Extremely hazardous substance		No
SARA 311/312 Hazardous chemical		No
SARA 313 (TRI reporting)		Not regulated.
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List		Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)		Not regulated.
Safe Drinking Water Act (SDWA)		Not regulated.
Food and Drug Administration (FDA)		Not regulated.
US state regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.	
Massachusetts RTK - Substance List		Not regulated.
New Jersey Worker and Community Right-to-Know Act		Not regulated.

Pennsylvania RTK - Hazardous Substances

Not regulated.

Rhode Island RTK

Not regulated.

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)

Not listed.

International inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	EC Inventory	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	01/30/2016
Revision date	09/30/2016
Version	10
Further information	Not available.
References	HSDB® - Hazardous Substances Data Bank Registry of Toxic Effects of Chemical Substances (RTECS) C&L Inventory database
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



SAFETY DATA SHEET

1. Identification

Product identifier	CycLex® AMPK Kinase Assay Kit Substrate Reagent
Other means of identification	
Product code	CY-1182
Recommended use	Research use only.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Manufacturer and Supplier (Asia)	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
Telephone number	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
Fax	+81-52-238-1440
E-mail	sds-support@mbl.co.jp
URL	http://www.mbl.co.jp/e/index.html
Contact person	SDS Support
Supplier	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
Telephone number	+1-800-200-5459, option 3
Fax	+1-781-939-6963
E-mail	tech@mblintl.com
URL	http://www.mblintl.com/
Contact person	Technical Service

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA hazard(s)	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	None.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None.

3. Composition/Information on ingredients

Mixtures

Chemical name	CAS number	%
Hydrogen peroxide	7722-84-1	< 0.1
3,3',5,5'-Tetramethylbenzidine	54827-17-7	≤ 0.05

Composition comments	All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
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4. First-aid measures

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
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Skin contact	Remove contaminated clothing. Dry skin with paper towel or similar. Get medical attention if irritation develops or persists.
Eye contact	Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops or persists.
Ingestion	Drink plenty of water. Get medical attention if any discomfort occurs.
Most important symptoms/effects, acute and delayed	May cause temporary irritation on skin or eye contact.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Get medical attention if any discomfort develops.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	None known.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/instructions	Move containers from fire area if you can do that without risk. Use water spray to cool unopened containers. Prevent entry to sewers and public waters.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid prolonged and repeated contact. Wear suitable protective clothing. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Absorb spillage with suitable absorbent material. After removal, flush contaminated area thoroughly with water.
Environmental precautions	Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling	Avoid contact with eyes and prolonged skin contact. Wear appropriate personal protective equipment (See Section 8). Wash hands after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Hydrogen peroxide (CAS 7722-84-1)	PEL	1.4 mg/m3 1 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Hydrogen peroxide (CAS 7722-84-1)	TWA	1 ppm

US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

Components	Type	Value
Hydrogen peroxide (CAS 7722-84-1)	TWA	1.4 mg/m3 1 ppm

Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated.

Appropriate engineering controls	Provide adequate ventilation.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Risk of splashes: Wear safety glasses with side shields.
Skin protection	
Hand protection	Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	No special precautions. Seek advice from local supervisor.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Pale amber.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under the prescribed storage conditions.
Possibility of hazardous reactions	None known.
Conditions to avoid	Contact with incompatible materials. Elevated temperatures.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure	
Ingestion	May cause discomfort if swallowed.

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	May cause eye irritation on direct contact.
Symptoms related to the physical, chemical and toxicological characteristics	May cause temporary irritation on skin or eye contact.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

Components	Species	Test Results
Hydrogen peroxide (CAS 7722-84-1)		
Acute		
<i>Oral</i>	LD50	Rat 311 mg/kg
<i>Dermal</i>	LD50	Rat 4,060 mg/kg

Skin corrosion/irritation Prolonged contact may cause dryness of the skin.

Serious eye damage/eye irritation May cause eye irritation on direct contact.

Respiratory sensitization No data available.

Skin sensitization No data available.

Germ cell mutagenicity No data available.

Carcinogenicity No data available.

Reproductive toxicity No data available.

Specific target organ toxicity No data available.

- single exposure

Specific target organ toxicity No data available.

- repeated exposure

Aspiration hazard No data available.

12. Ecological information**Ecotoxicity**

Components	Species	Test Results
Hydrogen peroxide (CAS 7722-84-1)		
Aquatic		
Algae	EC50	<i>Nitzschia</i> 0.85 mg/L, 72 hours

Persistence and degradability The product is biodegradable.

Bioaccumulative potential The product is not bioaccumulating.

Mobility in soil Expected to be highly mobile in soil.

Mobility in general The product is water soluble and may spread in water systems.

Other adverse effects The environmental hazard of the product is considered to be limited.

13. Disposal considerations

Disposal instructions Dispose of in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.

Local disposal regulations Dispose of in accordance with local regulations.

Hazardous waste code Not regulated.

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Dispose of in same manner as unused product.

14. Transport information

DOT Not regulated as dangerous goods.

IATA Not regulated as dangerous goods.

IMDG Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations	This product is not hazardous according to OSHA 29CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)		Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)		Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories		Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance		No
SARA 311/312 Hazardous chemical		No
SARA 313 (TRI reporting)		Not regulated.
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List		Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)		Not regulated.
Safe Drinking Water Act (SDWA)		Not regulated.
US state regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.	
Massachusetts RTK - Substance List		Not regulated.
New Jersey Worker and Community Right-to-Know Act		Not regulated.
Pennsylvania RTK - Hazardous Substances		Not regulated.
Rhode Island RTK		Not regulated.
California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)		Not listed.
International Inventories		
Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	EC Inventory	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	01/30/2016
Revision date	09/30/2016
Version	10
List of abbreviations	EC50: Effective Concentration, 50%. LD50: Lethal Dose, 50%.
Further information	Not available.
References	HSDB® - Hazardous Substances Data Bank Registry of Toxic Effects of Chemical Substances (RTECS) IARC Monographs. Overall Evaluation of Carcinogenicity

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.