



## SAFETY DATA SHEET

### 1. Identification

<b>Product identifier</b>	CycLex NAD <sup>+</sup> /NADH Colorimetric Assay Kit Ver2 ADH, Diaphorase
<b>Other means of identification</b>	
<b>Product code</b>	CY-1253V2
<b>Recommended use</b>	Research use only.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer / Importer / Supplier / Distributor information</b>	
<b>Manufacturer and Supplier (Asia)</b>	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
<b>Telephone number</b>	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
<b>Fax</b>	+81-52-238-1440
<b>E-mail</b>	sds-support@mbl.co.jp
<b>URL</b>	<a href="http://www.mbl.co.jp/e/index.html">http://www.mbl.co.jp/e/index.html</a>
<b>Contact person</b>	SDS Support
<b>Supplier</b>	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
<b>Telephone number</b>	+1-800-200-5459, option 3
<b>Fax</b>	+1-781-939-6963
<b>E-mail</b>	tech@mblintl.com
<b>URL</b>	<a href="http://www.mblintl.com/">http://www.mblintl.com/</a>
<b>Contact person</b>	Technical Service

### 2. Hazard(s) identification

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

### 3. Composition/Information on ingredients

#### Mixtures

Chemical name	CAS number	%
Glycerol (Glycerin)	56-81-5	50 - 60

<b>Composition comments</b>	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

<b>Inhalation</b>	Move to fresh air. Get medical attention if discomfort develops or persists.
<b>Skin contact</b>	Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation develops or persists.
<b>Ingestion</b>	Drink plenty of water. Seek medical advice.
<b>Most important symptoms/ effects, acute and delayed</b>	Irritation of eyes and mucous membranes. Mild skin irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Get medical attention if any discomfort develops.

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## 5. Fire fighting measures

<b>Suitable extinguishing media</b>	Water. Foam. Dry powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	Fire or high temperatures create: Carbon oxides.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.
<b>Fire-fighting equipment/instructions</b>	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.

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## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Ensure adequate ventilation. Avoid inhalation of mist and contact with skin and eyes. For personal protection, see Section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Dike far ahead of liquid spill for later disposal. Small Spills: Absorb spillage with suitable absorbent material. Clean contaminated surface thoroughly. After removal, flush contaminated area thoroughly with water. Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so.

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## 7. Handling and storage

<b>Precautions for safe handling</b>	Provide adequate ventilation. Use work methods which minimize production of vapors and mists. Avoid inhalation of mist and contact with skin and eyes. Wash hands after handling. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep container tightly closed. Store away from incompatible materials.

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## 8. Exposure controls/personal protection

### Occupational exposure limits

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

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	TWA	10 mg/m <sup>3</sup>	Mist.

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Exposure guidelines</b>	No exposure standards allocated.
<b>Appropriate engineering controls</b>	Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses.
<b>Skin protection</b>	

<b>Hand protection</b>	Wear protective gloves. 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.
<b>Other</b>	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear protective gloves. 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.
<b>Respiratory protection</b>	In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment with combination filter (gas filter/dust filter). Seek advice from local supervisor.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	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

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

## 10. Stability and reactivity

<b>Reactivity</b>	The product is non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Stable at normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous reactions do not occur.
<b>Conditions to avoid</b>	Strong heating. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	None known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	Ingestion may cause irritation and malaise.
<b>Inhalation</b>	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

<b>Skin contact</b>	May cause skin irritation. Causes skin irritation.
<b>Eye contact</b>	May cause eye irritation on direct contact. Causes eye irritation.
<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Irritation of eyes and mucous membranes. Mild skin irritation.
<b>Information on toxicological effects</b>	
<b>Acute toxicity</b>	Ingestion may cause irritation and malaise.
<b>Skin corrosion/irritation</b>	May cause skin irritation.
<b>Serious eye damage/eye irritation</b>	May cause eye irritation on direct contact.
<b>Respiratory sensitization</b>	Not classified.
<b>Skin sensitization</b>	Not a skin sensitizer.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	IARC not listed.
<b>Reproductive toxicity</b>	Not classified.
<b>Specific target organ toxicity - single exposure</b>	Knowledge about health hazard is incomplete.
<b>Specific target organ toxicity - repeated exposure</b>	Knowledge about health hazard is incomplete.
<b>Aspiration hazard</b>	Not classified.

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## 12. Ecological information

<b>Ecotoxicity</b>	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.
<b>Persistence and degradability</b>	The product is biodegradable.
<b>Bioaccumulative potential</b>	The product is not bioaccumulating.
<b>Partition coefficient <i>n</i>-octanol / water (log <i>K</i><sub>ow</sub>)</b>	
	Glycerol (CAS 56-81-5) -1.76
<b>Mobility in soil</b>	Expected to be highly mobile in soil.
<b>Mobility in general</b>	The product is water soluble and may spread in water systems.
<b>Other adverse effects</b>	No data available.

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## 13. Disposal considerations

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

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## 14. Transport information

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

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## 15. Regulatory information

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

<b>Hazard categories</b>		Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
<b>SARA 302 Extremely hazardous substance</b>		No
<b>SARA 311/312 Hazardous chemical</b>		Yes
<b>Other federal regulations</b>		
<b>Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List</b>		Not regulated.
<b>Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)</b>		Not regulated.
<b>Safe Drinking Water Act (SDWA)</b>		Not regulated.
<b>Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number</b>		Not listed.
<b>Drug Enforcement Administration (DEA). List 1 &amp; 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))</b>		Not regulated.
<b>DEA Exempt Chemical Mixtures Code Number</b>		Not regulated.
<b>Food and Drug Administration (FDA)</b>		Not regulated.
<b>US state regulations</b>	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.	
<b>Massachusetts RTK - Substance List</b>		Glycerol (CAS 56-81-5)
<b>New Jersey Worker and Community Right-to-Know Act</b>		Not regulated.
<b>Pennsylvania RTK - Hazardous Substances</b>		Glycerol (CAS 56-81-5)
<b>Rhode Island RTK</b>		Glycerol (CAS 56-81-5)
<b>California Proposition 65 - Carcinogens &amp; Reproductive Toxicity (CRT)</b>		Not listed.
<b>International Inventories</b>		
<b>Country(s) or region</b>	<b>Inventory name</b>	<b>On inventory (yes/no)*</b>
<b>Australia</b>	Australian Inventory of Chemical Substances (AICS)	Yes
<b>Canada</b>	Domestic Substances List (DSL)	Yes
<b>Canada</b>	Non-Domestic Substances List (NDSL)	No
<b>China</b>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<b>Europe</b>	EC Inventory	Yes
<b>Japan</b>	Inventory of Existing and New Chemical Substances (ENCS)	Yes
<b>Korea</b>	Existing Chemicals List (ECL)	Yes
<b>New Zealand</b>	New Zealand Inventory	Yes
<b>Philippines</b>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<b>United States &amp; Puerto Rico</b>	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).		

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## 16. Other information

<b>Issue date</b>	07/05/2017
<b>Revision date</b>	-
<b>Version</b>	10
<b>Further information</b>	Not available.
<b>References</b>	IUCLID
<b>Disclaimer</b>	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

<b>Product identifier</b>	CycLex NAD <sup>+</sup> /NADH Colorimetric Assay Kit Ver2 EtOH Solution
<b>Other means of identification</b>	
<b>Product code</b>	CY-1253V2
<b>Recommended use</b>	Research use only.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer / Importer / Supplier / Distributor information</b>	
<b>Manufacturer and Supplier (Asia)</b>	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
<b>Telephone number</b>	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
<b>Fax</b>	+81-52-238-1440
<b>E-mail</b>	sds-support@mbl.co.jp
<b>URL</b>	<a href="http://www.mbl.co.jp/e/index.html">http://www.mbl.co.jp/e/index.html</a>
<b>Contact person</b>	SDS Support
<b>Supplier</b>	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
<b>Telephone number</b>	+1-800-200-5459, option 3
<b>Fax</b>	+1-781-939-6963
<b>E-mail</b>	tech@mblintl.com
<b>URL</b>	<a href="http://www.mblintl.com/">http://www.mblintl.com/</a>
<b>Contact person</b>	Technical Service

### 2. Hazard(s) identification

<b>Physical hazards</b>	Flammable liquids	Category 3
<b>Health hazards</b>	Serious eye damage/eye irritation	Category 2
<b>OSHA hazard(s)</b>	Not classified.	

#### Label elements

##### Hazard symbol



##### Signal word

Warning

##### Hazard statement

Flammable liquid and vapor. Causes serious eye irritation.

##### Precautionary statement

###### Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Wear protective gloves/eye protection/face protection.

###### Response

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.

###### Storage

Store in a well-ventilated place. Keep cool.

###### 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	%
Ethanol	64-17-5	20 - 30

**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**

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/ effects, acute and delayed</b>	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Get medical attention if any discomfort continues.

**5. Fire-fighting measures**

<b>Suitable extinguishing media</b>	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	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.
<b>Fire-fighting equipment/ instructions</b>	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	Flammable liquid and vapor.

**6. Accidental release measures**

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see Section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see Section 13 of the SDS. Wipe up with absorbent material (e.g. cloth, fleece).
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage**

<b>Precautions for safe handling</b>	Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

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

Components	Type	Value
Ethanol (CAS 64-17-5)	PEL	1,900 mg/m <sup>3</sup> 1,000 ppm

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Ethanol (CAS 64-17-5)	STEL	1,000 ppm

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Ethanol (CAS 64-17-5)	TWA	1,900 mg/m <sup>3</sup> 1,000 ppm

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Provide adequate ventilation. Explosion-proof general and local exhaust ventilation.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
<b>Other</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	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

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Colorless.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	78.5 °C (173.3 °F) Ethanol
<b>Flash point</b>	29 °C (84 °F) (30% Ethanol in water) estimated
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit</b>	Not available.
<b>- lower (%)</b>	



<b>Flammability limit</b>	Not available.
<b>- upper (%)</b>	
<b>Explosive limit</b>	Not available.
<b>- lower (%)</b>	
<b>Explosive limit</b>	Not available.
<b>- upper (%)</b>	
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	Soluble in water.
<b>Partition coefficient</b>	Not available.
<b>(<i>n</i>-octanol/water)</b>	
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and
<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Avoid heat, sparks, open flames and other ignition sources. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.
<b>Inhalation</b>	Prolonged inhalation may be harmful.
<b>Skin contact</b>	Prolonged or repeated skin contact may cause drying, cracking, or irritation.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Headache. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing.

### Information on toxicological effects

#### Acute toxicity

Components	Species	Test Results
Ethanol (CAS 64-17-5)		
<b>Acute</b>		
<i>Oral</i>	LD50 Rat	7,000 - 11,000 mg/kg
<i>Inhalation</i>	LC50 Mouse	39 g/m <sup>3</sup> , 4 hours

<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/eye irritation</b>	Causes serious eye irritation.
<b>Respiratory sensitization</b>	Based on available data, the classification criteria are not met.
<b>Skin sensitization</b>	Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Due to lack of data the classification is not possible.
<b>Carcinogenicity</b>	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	Not listed.
<b>NTP Report on Carcinogens</b>	Not listed.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	Not listed.

<b>Reproductive toxicity</b>	Due to lack of data the classification is not possible.
<b>Specific target organ toxicity - single exposure</b>	Due to lack of data the classification is not possible.
<b>Specific target organ toxicity - repeated exposure</b>	Due to lack of data the classification is not possible.
<b>Aspiration hazard</b>	Due to lack of data the classification is not possible.
<b>Chronic effects</b>	Prolonged inhalation may be harmful.

## 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
Ethanol (CAS 64-17-5)		
<b>Aquatic</b>		
Crustacea	LC50	<i>Ceriodaphnia dubia</i> 5,012 mg/L, 48 hours <i>Daphnia magna</i> 454 mg/L, 11 days
	NOEC	<i>Ceriodaphnia dubia</i> 9.6 mg/L
Fish	LC50	<i>Pimephales promelas</i> 13,480 mg/L, 96 hours

**Persistence and degradability** No data available.

### Bioaccumulative potential

#### Partition coefficient n-octanol / water (log Kow)

Ethanol (CAS 64-17-5) -0.31

**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** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**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

<b>UN number</b>	UN1170
<b>UN proper shipping name</b>	Ethanol solution
<b>Transport hazard class(es)</b>	
<b>Classes</b>	3
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	3
<b>Packing group</b>	III
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	24, B1, IB3, T2, TP1
<b>Packaging exceptions</b>	4b, 150
<b>Packaging non bulk</b>	203
<b>Packaging bulk</b>	242

### IATA

<b>UN number</b>	UN1170
<b>UN proper shipping name</b>	Ethanol solution
<b>Transport hazard class(es)</b>	

<b>Classes</b>	3
<b>Subsidiary risk</b>	-
<b>Packaging group</b>	III
<b>Environmental hazards</b>	No
<b>ERG Code</b>	3L
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

**IMDG**

<b>UN number</b>	UN1170
<b>UN proper shipping name</b>	Ethanol solution
<b>Transport hazard class(es)</b>	
<b>Classes</b>	3
<b>Subsidiary risk</b>	-
<b>Packaging group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No
<b>EmS</b>	F-E, S-D
<b>Special precautions for user</b>	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 a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>	Not regulated.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	Not listed.
<b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>	Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

<b>Hazard categories</b>	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
<b>SARA 302 Extremely hazardous substance</b>	Not listed.
<b>SARA 311/312 Hazardous chemical</b>	Yes
<b>SARA 313 (TRI reporting)</b>	Not regulated.

**Other federal regulations**

<b>Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List</b>	Not regulated.
<b>Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)</b>	Not regulated.
<b>Safe Drinking Water Act (SDWA)</b>	Not regulated.

**US state regulations**

<b>Massachusetts RTK - Substance List</b>	Ethanol (CAS 64-17-5)
<b>New Jersey Worker and Community Right-to-Know Act</b>	Ethanol (CAS 64-17-5)
<b>Pennsylvania Worker and Community Right-to-Know Law</b>	Ethanol (CAS 64-17-5)
<b>Rhode Island RTK</b>	Not regulated.
<b>California Proposition 65</b>	Not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

<b>Country(s) or region</b>	<b>Inventory name</b>	<b>On inventory (yes/no)*</b>
<b>Australia</b>	Australian Inventory of Chemical Substances (AICS)	Yes
<b>Canada</b>	Domestic Substances List (DSL)	Yes
<b>Canada</b>	Non-Domestic Substances List (NDSL)	No
<b>China</b>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<b>Europe</b>	EC Inventory	Yes

<b>Japan</b>	Inventory of Existing and New Chemical Substances (ENCS)	Yes
<b>Korea</b>	Existing Chemicals List (ECL)	Yes
<b>New Zealand</b>	New Zealand Inventory	Yes
<b>Philippines</b>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<b>United States &amp; Puerto Rico</b>	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).

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## 16. Other information

<b>Issue date</b>	07/05/2017
<b>Revision date</b>	-
<b>Version</b>	10
<b>List of abbreviations</b>	LC50: Lethal Concentration, 50%. LD50: Lethal Dose, 50%. NOEC: No Observed Effect Concentration.
<b>Further information</b>	Not available.
<b>References</b>	HSDB® - Hazardous Substances Data Bank Registry of Toxic Effects of Chemical Substances (RTECS)
<b>Disclaimer</b>	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

<b>Product identifier</b>	CycLex NAD <sup>+</sup> /NADH Colorimetric Assay Kit Ver2 400 µM NADH
<b>Other means of identification</b>	
<b>Product code</b>	CY-1253V2
<b>Recommended use</b>	Research use only.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer / Importer / Supplier / Distributor information</b>	
<b>Manufacturer and Supplier (Asia)</b>	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
<b>Telephone number</b>	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
<b>Fax</b>	+81-52-238-1440
<b>E-mail</b>	sds-support@mbi.co.jp
<b>URL</b>	<a href="http://www.mbl.co.jp/e/index.html">http://www.mbl.co.jp/e/index.html</a>
<b>Contact person</b>	SDS Support
<b>Supplier</b>	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
<b>Telephone number</b>	+1-800-200-5459, option 3
<b>Fax</b>	+1-781-939-6963
<b>E-mail</b>	tech@mblintl.com
<b>URL</b>	<a href="http://www.mblintl.com/">http://www.mblintl.com/</a>
<b>Contact person</b>	Technical Service

### 2. Hazard(s) identification

<b>Physical hazards</b>	Flammable liquids	Category 4
<b>Health hazards</b>	Not classified.	
<b>OSHA hazard(s)</b>	Not classified.	
<b>Label elements</b>		
<b>Hazard symbol</b>	None.	
<b>Signal word</b>	Warning	
<b>Hazard statement</b>	Combustible liquid.	
<b>Precautionary statement</b>		
<b>Prevention</b>	Keep away from flames and hot surfaces. - No smoking. Wear protective gloves/eye protection/face protection.	
<b>Response</b>	In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction.	
<b>Storage</b>	Store in a well-ventilated place. Keep cool.	
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.	
<b>Hazard(s) not otherwise classified (HNOC)</b>	None.	

### 3. Composition/Information on ingredients

#### Mixtures

Chemical name	CAS number	%
Dimethyl sulfoxide (DMSO)	67-68-5	90 - 100

**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 to fresh air. Get medical attention if any discomfort continues.

<b>Skin contact</b>	Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.
<b>Eye contact</b>	Immediately flush eye(s) with plenty of water. Remove any contact lenses and open eyelids wide apart. Get medical attention if irritation develops or persists.
<b>Ingestion</b>	Rinse mouth thoroughly. Get medical attention if any discomfort continues.
<b>Most important symptoms/ effects, acute and delayed</b>	Mild eye irritation. May cause mild skin irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Get medical attention if any discomfort develops.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water. Foam. Dry powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	Vapors may form explosive mixtures with air. By heating and fire, harmful vapors/gases may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.
<b>Fire-fighting equipment/ instructions</b>	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

<b>Personal precautions, protective equipment and emergency procedures</b>	Ensure adequate ventilation. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Avoid inhalation of mist and contact with skin and eyes. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Dike far ahead of liquid spill for later disposal. Small Spills: Absorb spillage with non-combustible, absorbent material. Clean contaminated surface thoroughly. After removal, flush contaminated area thoroughly with water. Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Provide adequate ventilation. Use work methods which minimize production of vapors and mists. Avoid inhalation of mist and contact with skin and eyes. Do not smoke, use open fire or other sources of ignition. Wash hands after handling. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep away from sources of ignition - No smoking. Keep container tightly closed. Store away from incompatible materials.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Dimethyl sulfoxide (DMSO) (CAS 67-68-5)	TWA	250 ppm

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Exposure guidelines</b>	No exposure standards allocated.
<b>Appropriate engineering controls</b>	Provide adequate ventilation and minimize the risk of inhalation of vapors and mists. Use explosion-proof equipment.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	If risk of splashing, wear safety goggles or face shield.
<b>Skin protection</b>	

<b>Hand protection</b>	Wear protective gloves. 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.
<b>Other</b>	Wear apron or protective clothing in case of splashes.
<b>Respiratory protection</b>	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. Seek advice from local supervisor.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants.

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## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Colorless.
<b>Odor</b>	Garlic-like odor.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	372.2 °F (189 °C) DMSO
<b>Flash point</b>	188.6 °F (87.0 °C) DMSO
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	Soluble in water.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.

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## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and
<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Possibility of hazardous reactions</b>	None known.
<b>Conditions to avoid</b>	Heat, flames and sparks. Moisture.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Sulfur oxides. Carbon oxides.

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## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	Large quantities: May be absorbed in the body and cause dizziness, nausea and vomiting.
<b>Inhalation</b>	Components of the product may be absorbed into the body by inhalation.
<b>Skin contact</b>	May be absorbed through the skin. DMSO (dimethyl sulfoxide) easily penetrates the skin and may enhance the rate of skin absorption of skin-permeable substances.

**Eye contact** Direct contact with eyes may cause temporary irritation.  
**Symptoms related to the physical, chemical and toxicological characteristics** Mild eye irritation. May cause mild skin irritation.

**Information on toxicological effects**

**Acute toxicity** Large quantities: May cause discomfort if swallowed. May be absorbed in the body and cause dizziness, nausea and vomiting.

Components	Species	Test Results
Dimethyl sulfoxide (DMSO) (CAS 67-68-5)		
<b>Acute</b>		
<i>Oral</i>	LD50	Mouse 7,920 mg/kg Rat 17.9 ml/kg

**Skin corrosion/irritation** May cause mild skin irritation. DMSO (dimethyl sulfoxide) easily penetrates the skin and may enhance the rate of skin absorption of skin-permeable substances.

**Serious eye damage/eye irritation** Direct contact with eyes may cause temporary irritation.

**Respiratory sensitization** No data available.

**Skin sensitization** No data available.

**Germ cell mutagenicity** No data available.

**Carcinogenicity**

**IARC Monographs. Overall Evaluation of Carcinogenicity** Not listed.

**NTP Report on Carcinogens** Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)** Not listed.

**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.

Components	Species	Test Results
Dimethyl sulfoxide (DMSO) (CAS 67-68-5)		
<b>Aquatic</b>		
Fish	LC50	Rainbow trout, donaldson trout ( <i>Oncorhynchus mykiss</i> ) 33,000 - 37,000 mg/L, 96 hours

**Persistence and degradability** No data available.

**Bioaccumulative potential****Partition coefficient *n*-octanol / water (log *K*<sub>ow</sub>)**

Dimethyl sulfoxide (DMSO) (CAS 67-68-5) -2.03

**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** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**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.



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**14. Transport information****DOT**

<b>UN number</b>	NA1993
<b>UN proper shipping name</b>	Combustible liquids, n.o.s. (Dimethyl sulfoxide (DMSO))
<b>Transport hazard class(es)</b>	
<b>Class</b>	Combustible Liquid.
<b>Subsidiary risk</b>	–
<b>Label(s)</b>	None
<b>Packing group</b>	III
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling. This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less.
<b>Special provisions</b>	IB3, T1, T4, TP1
<b>Packaging exceptions</b>	150
<b>Packaging non bulk</b>	203
<b>Packaging bulk</b>	241
<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.

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**15. Regulatory information**

<b>US federal regulations</b>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.	
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>		Not regulated.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>		Not listed.
<b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>		Not listed.
<b>Superfund Amendments and Reauthorization Act of 1986 (SARA)</b>		
<b>Hazard categories</b>		Immediate Hazard - No Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
<b>SARA 302 Extremely hazardous substance</b>		Not listed.
<b>SARA 311/312 Hazardous chemical</b>		Yes
<b>SARA 313 (TRI reporting)</b>		Not regulated.
<b>Other federal regulations</b>		
<b>Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List</b>		Not regulated.
<b>Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)</b>		Not regulated.
<b>Safe Drinking Water Act (SDWA)</b>		Not regulated.
<b>US state regulations</b>		
<b>Massachusetts RTK - Substance List</b>		Not regulated.
<b>New Jersey Worker and Community Right-to-Know Act</b>		Dimethyl sulfoxide (DMSO) (CAS 67-68-5)
<b>Pennsylvania Worker and Community Right-to-Know Law</b>		Not regulated.
<b>Rhode Island RTK</b>		Not regulated.
<b>California Proposition 65 - Carcinogens &amp; Reproductive Toxicity (CRT)</b>		Not listed.
<b>International Inventories</b>		
<b>Country(s) or region</b>	<b>Inventory name</b>	<b>On inventory (yes/no)*</b>
<b>Australia</b>	Australian Inventory of Chemical Substances (AICS)	Yes
<b>Canada</b>	Domestic Substances List (DSL)	Yes
<b>Canada</b>	Non-Domestic Substances List (NDSL)	No
<b>China</b>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<b>Europe</b>	EC Inventory	Yes
<b>Japan</b>	Inventory of Existing and New Chemical Substances (ENCS)	Yes

<b>Korea</b>	Existing Chemicals List (ECL)	Yes
<b>New Zealand</b>	New Zealand Inventory	Yes
<b>Philippines</b>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<b>United States &amp; Puerto Rico</b>	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).

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## 16. Other information

<b>Issue date</b>	07/05/2017
<b>Revision date</b>	-
<b>Version</b>	10
<b>List of abbreviations</b>	LC50: Lethal Concentration, 50%. LD50: Lethal Dose, 50%.
<b>Further information</b>	Not available.
<b>References</b>	International Chemical Safety Cards (ICSC) GESTIS Substance Database ECHA CHEM
<b>Disclaimer</b>	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

<b>Product identifier</b>	CycLex NAD <sup>+</sup> /NADH Colorimetric Assay Kit Ver2 NAD <sup>+</sup> /NADH Assay Buffer (20X), WST-1, 20X Standard Dilution Buffer
<b>Other means of identification</b>	
<b>Product code</b>	CY-1253V2
<b>Recommended use</b>	Research use only.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer / Importer / Supplier / Distributor information</b>	
<b>Manufacturer and Supplier (Asia)</b>	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
<b>Telephone number</b>	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
<b>Fax</b>	+81-52-238-1440
<b>E-mail</b>	sds-support@mbl.co.jp
<b>URL</b>	<a href="http://www.mbl.co.jp/e/index.html">http://www.mbl.co.jp/e/index.html</a>
<b>Contact person</b>	SDS Support
<b>Supplier</b>	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
<b>Telephone number</b>	+1-800-200-5459, option 3
<b>Fax</b>	+1-781-939-6963
<b>E-mail</b>	tech@mblintl.com
<b>URL</b>	<a href="http://www.mblintl.com/">http://www.mblintl.com/</a>
<b>Contact person</b>	Technical Service

### 2. Hazard(s) identification

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

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

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

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Use fire-extinguishing media appropriate for surrounding materials.
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	None known.
<b>Special protective equipment and precautions for firefighters</b>	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.
<b>Fire-fighting equipment/ instructions</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	The product is non-combustible.

## 6. Accidental release measures

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

## 7. Handling and storage

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

## 8. Exposure controls/personal protection

<b>Occupational exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Provide adequate ventilation.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	If risk of splashing, wear safety goggles or face shield.
<b>Skin protection</b>	
<b>Hand protection</b>	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.
<b>Other</b>	Wear protective gloves. Wear appropriate clothing to prevent repeated or prolonged skin contact.
<b>Respiratory protection</b>	No protection is ordinarily required under normal conditions of use.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	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**

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

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## 10. Stability and reactivity

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

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## 11. Toxicological information

### Information on likely routes of exposure

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

### Information on toxicological effects

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

<b>Specific target organ toxicity - single exposure</b>	No data available.
<b>Specific target organ toxicity - repeated exposure</b>	No data available.
<b>Aspiration hazard</b>	No data available.

## 12. Ecological information

<b>Ecotoxicity</b>	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.
<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available.
<b>Mobility in general</b>	The product is water soluble and may spread in water systems.
<b>Other adverse effects</b>	No data available.

## 13. Disposal considerations

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

## 14. Transport information

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

## 15. Regulatory information

<b>US federal regulations</b>	This product is not hazardous according to OSHA 29CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>	Not regulated.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	Not listed.
<b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>	Not listed.
<b>Superfund Amendments and Reauthorization Act of 1986 (SARA)</b>	
<b>Hazard categories</b>	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
<b>SARA 302 Extremely hazardous substance</b>	No
<b>SARA 311/312 Hazardous chemical</b>	No
<b>SARA 313 (TRI reporting)</b>	Not regulated.
<b>Other federal regulations</b>	
<b>Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List</b>	Not regulated.
<b>Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)</b>	Not regulated.
<b>Safe Drinking Water Act (SDWA)</b>	Not regulated.
<b>Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number</b>	Not listed.
<b>Drug Enforcement Administration (DEA). List 1 &amp; 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))</b>	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)*
<b>Australia</b>	Australian Inventory of Chemical Substances (AICS)	Yes
<b>Canada</b>	Domestic Substances List (DSL)	Yes
<b>Canada</b>	Non-Domestic Substances List (NDSL)	No
<b>China</b>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<b>Europe</b>	EC Inventory	Yes
<b>Japan</b>	Inventory of Existing and New Chemical Substances (ENCS)	Yes
<b>Korea</b>	Existing Chemicals List (ECL)	Yes
<b>New Zealand</b>	New Zealand Inventory	Yes
<b>Philippines</b>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<b>United States &amp; Puerto Rico</b>	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).

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## 16. Other information

**Issue date** 07/05/2017  
**Revision date** -  
**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.