




SAFETY DATA SHEET

1. Identification

Product identifier	DAB Substrate Solution (Histostar) Chromogenic substrate (Solution A)	
Other means of identification		
Product code	8469	
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	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 1B
OSHA hazard(s)	Not classified.	
Label elements		
Hazard symbol		
Signal word	Danger	
Hazard statement	Suspected of causing genetic defects. May cause cancer.	
Precautionary statement		
Prevention	Obtain special instructions before use. Use personal protective equipment as required.	
Response	If exposed or concerned: Get medical advice/attention.	
Storage	Store locked up.	
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.	
Hazard(s) not otherwise classified (HNOC)	None.	
Supplemental information	Restricted to professional users.	

3. Composition/Information on ingredients

Mixtures

Chemical name	CAS number	%
3,3-Diaminobenzidine tetrahydrochloride	7411-49-6	3
Ethanol	64-17-5	4

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 Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Skin contact Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. Get medical attention if any discomfort continues.

Eye contact Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.

Ingestion Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable take to hospital along with these instructions.

Most important symptoms/ effects, acute and delayed May cause skin and eye irritation. Symptoms may be delayed.

Indication of immediate medical attention and special treatment needed Treat symptomatically. Symptoms may be delayed.

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 fire-fighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Wear suitable protective clothing. Avoid contact with eyes, skin, and 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. Never return spills to original containers for re-use.

Environmental precautions Avoid discharge into water courses or onto the ground. Environmental manager must be informed of all releases.

7. Handling and storage

Precautions for safe handling Should be handled in closed systems, if possible. Obtain special instructions before use. Avoid contact with skin and eyes. Pregnant women should not work with the product, if there is the least risk of exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Store in tightly closed original container in a dry, cool and well-ventilated place. 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
Ethanol (CAS 64-17-5)	PEL	1,900 mg/m3
		1,000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
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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 ³ 1,000 ppm

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Should be handled in closed systems, if possible. Provide easy access to water supply and eye wash facilities.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Risk of splashes: Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear protective gloves. Nitrile or neoprene gloves are recommended. 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	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. Under normal conditions, respirator is not normally required.
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. Private clothes and working clothes should be kept separately. Observe any medical surveillance requirements.

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 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 stable and non reactive under normal conditions of use, storage and
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	Nitrogen oxides. Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May cause discomfort if swallowed.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	May cause eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics May cause skin and eye irritation. Symptoms may be delayed.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
3,3-Diaminobenzidine tetrahydrochloride (CAS 7411-49-6)		
Acute		
<i>Oral</i>	LD50 Mouse	330 mg/kg
Ethanol (CAS 64-17-5)		
Acute		
<i>Oral</i>	LD50 Rat	7,000 - 11,000 mg/kg
<i>Inhalation</i>	LC50 Mouse	39 g/m ³ , 4 hours

Skin corrosion/irritation	Prolonged contact may cause dryness of the skin and temporary irritation.
Serious eye damage/eye irritation	May cause eye irritation.
Respiratory sensitization	No data available.
Skin sensitization	No data available.
Germ cell mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	May cause cancer.
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.
Chronic effects	May cause cancer. Suspected of causing genetic defects.

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)		
Aquatic		
Crustacea	LC50 <i>Ceriodaphnia dubia</i>	5,012 mg/L, 48 hours
	<i>Daphnia magna</i>	454 mg/L, 11 days
Fish	NOEC <i>Ceriodaphnia dubia</i>	9.6 mg/L
	LC50 <i>Pimephales promelas</i>	13,480 mg/L, 96 hours

Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Mobility in general	No data available.

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 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 - Yes
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 Ethanol (CAS 64-17-5)

New Jersey Worker and Community Right-to-Know Act Ethanol (CAS 64-17-5)

Pennsylvania RTK - Hazardous Substances Ethanol (CAS 64-17-5)

Rhode Island RTK Not regulated.

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT) Not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

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	LD50: Lethal Dose, 50%.
Further information	Not available.
References	ECHA C&L Inventory database GESTIS Substance 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	DAB Substrate Solution (Histostar) Chromogenic reagent (Solution C)
Other means of identification	
Product code	8469
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 - < 1

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	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	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, 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. 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	Ventilation is not normally required.
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. Nitrile or neoprene gloves are recommended. 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	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 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 at normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur. Hazardous reactions do not occur.
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		
Oral	LD50 Rat	311 mg/kg
Dermal	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 This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
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 Not classified.

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		On inventory (yes/no)*
Country(s) or region	Inventory name	
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 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.



SAFETY DATA SHEET

1. Identification

Product identifier	DAB Substrate Solution (Histostar) Substrate buffer (Solution B)	
Other means of identification		
Product code	8469	
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	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Reproductive toxicity	Category 1B
OSHA hazard(s)	Not classified.	
Label elements		
Hazard symbol		
Signal word	Danger	
Hazard statements	Causes skin irritation. Causes serious eye damage. May damage fertility or the unborn child.	
Precautionary statement		
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.	
Response	Immediately call a poison center/doctor. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
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	%
Imidazole	288-32-4	3.5
Polyoxyethylene dodecyl ether	9002-92-0	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 to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	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 immediately.
Ingestion	Rinse mouth. Consult a physician.
Most important symptoms/effects, acute and delayed	Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Get medical attention if any discomfort develops.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
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 it 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	Ensure adequate ventilation. Avoid dust formation. Avoid breathing vapors, mist or gas. For personal protection, see Section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). 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.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with eyes, skin, and clothing. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in original tightly closed container. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for the ingredient(s).
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Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated.
Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields or goggles.
Skin protection	
Hand protection	Wear protective gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.
Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practices. 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	Colourless.
Odor	Odourless.
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 - 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.
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

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	Not known.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.

Hazardous decomposition products Carbon oxides. Nitrogen oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin contact Causes skin irritation.

Eye contact Causes serious eye damage.

Ingestion May be harmful if swallowed. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity

Components	Species	Test results
Imidazole (CAS 288-32-4)		
Acute		
<i>Oral</i>	LD50	Rat 970 mg/kg
Polyoxyethylene dodecyl ether (CAS 9002-92-0)		
Acute		
<i>Oral</i>	LD50	Rat 544 mg/kg

Skin corrosion/irritation May cause skin irritation.

Serious eye damage/eye irritation May cause eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization Not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity May damage fertility or the unborn child.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Further information Not 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 can have a harmful or damaging effect on the environment.

Persistence and degradability No data available.

Bioaccumulative potential

Partition coefficient *n*-octanol/water (log *K*_{ow}) Imidazole (CAS 288-32-4) 0.0586

Bioconcentration factor (BCF) 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 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 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	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	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 - Yes Delayed Hazard - Yes 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(r) Accidental Release Prevention (40 CFR 68.130)		Not regulated.
US state regulations		
Massachusetts RTK - Substance List		Not regulated.
New Jersey Worker and Community Right-to-Know Act		Not regulated.
Pennsylvania RTK - Hazardous Substances		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
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Revision date	09/30/2016
Version	10
List of abbreviations	LC50: Lethal Concentration, 50%. LD50: Lethal Dose, 50%.
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.