Material Safety Data Sheet

MSDS/SDS Number: 00000367MSDS

Latest Revision Date: March 1, 2010

Revision: A

SECTION 1 IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: Luminol Reagent.

Catalogue Number(s): See Section 16.

Chemical Name: Aqueous solution of Inorganic buffer salts, nonhazardous, 5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione, and Enhancers and Stabilizers.

Synonyms: None.

Intended Product Use: Detection of Horse Radish Peroxidase (HRP) for Research Purposes.

Manufacturer/Distributor:	Millipore Corporation (Corporate Headquarters)	Millipore S.A.S. (European Headquarters)
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Email: msds@millipore.com

CHEMTREC Emergency Telephone Number: International +1-703-527-3887 (collect)
North America 1-800-424-9300 (toll free)

SECTION 2 HAZARDS IDENTIFICATION

Globally Harmonized System of Classification and Labeling of Chemicals (GHS):

Symbol: *No Symbol*

Hazard Category: *None Applicable.*

Signal Word: *None Applicable.*

Hazard Statement: *None Applicable.*

GHS Precautionary Statements:

Prevention: P281: Use personal protective equipment as required.

Response: P308+P313: If exposed or concerned: Get medical advice/attention.

Storage: P403+P233: Store in a well ventilated place. Keep container tightly closed.

Disposal: P501: Dispose of content/container in accordance with local regulations.

Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH):

Symbol: *No Symbol*

Symbol Letter: *None Applicable.*

Hazard: *None Applicable.*

Risk Phrase: *None Applicable.*

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Identification of Dangerous Components: This product contains the substances listed below, which are defined as dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard 29 CFR 1910.1200.

Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters*†	R Phrases** †
Inorganic buffer salts:	Mixture	Mixture	< 5 %	N/A	N/A
5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione:	208-309-4	521-31-3	< 1 %	N/A	N/A
Enhancers and stabilizers:	Mixture	Mixture	< 1 %	N/A	N/A

Identification of Components Not Classified as Dangerous: This product contains the substances listed below, which are not defined as dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard 29 CFR 1910.1200.

Non-Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters *	R Phrases**
Water:	231-791-2	7732-18-5	> 93.5 %	N/A	N/A

* Symbol letters and categories of danger: **T+** = Very toxic, **T** = Toxic, **C** = Corrosive, **Xn** = Harmful, **X**i = Irritant, **E** = Explosive, **F+** = Extremely flammable, **F** = Very flammable, **N** = Dangerous for the environment, **O** = Oxidising.

** The full text of each R phrase is listed in Section 15.

† Symbols letters and R Phrases are assigned to each dangerous component for the highest concentration range as defined in 67/548/EEC and 1999/45/EC.

SECTION 4 FIRST AID MEASURES

	Treatment Measures:	Symptoms of Exposure:
Contact with Eyes:	If the product contacts the eyes, promptly wash (irrigate) the eyes with large amounts of tepid water for at least 15 minutes, occasionally lifting the lower and upper lids. Seek medical attention immediately.	Possible eye irritation.
Ingestion:	Seek medical attention immediately. Never give an unconscious person anything by mouth.	Possible gastrointestinal irritation causing nausea and vomiting.

Inhalation:	If a person inhales large amounts of the product move the exposed person to fresh air at once. If breathing is difficult or stops seek immediate medical attention.	Possible respiratory tract and mucous membrane irritation.
Skin Contact:	If the product contacts the skin, immediately flush the contaminated skin with mild soap and water. If this chemical penetrates clothing immediately remove the clothing and flush the skin with water. Seek medical attention immediately.	Possible skin irritation.

SECTION 5 FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Use extinguishing media appropriate for the surrounding fire. This product is compatible with commercially available extinguishing media.

Special Protective Equipment for Firefighters: This product does not require the use of any additional fire fighting equipment beyond what is appropriate to the surrounding fire.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear chemical resistant boots, clothing, eye protection, and gloves to prevent skin contact (See Section 8).

Small Spills: Identify the spilled material(s). Barricade the spill area and notify others in the surrounding areas. Control all sources of ignition if the substance is flammable. Don the appropriate personal protective equipment (See section 8). Control the movement of the spilled product (into drains, soil, across floors etc.) with absorbent spill materials. Collect contaminated spill material and place in container meeting appropriate U.N. packaging requirements. Decontaminate used equipment and affected spill area appropriately.

Large Spills: In addition to small spill precautions, determine personnel evacuation distances. Notify appropriate authorities if necessary.

Environmental Precautions: Collect and dispose of contaminated materials according to international, federal, state and local regulations. Keep away from surface and ground water, drains, and soil.

SECTION 7 HANDLING AND STORAGE

Handling: Seek appropriate training to safely handle this product under normal conditions. Use the recommended personal protective equipment (See Section 8) to prevent chemical exposures. Wash hands with soap and water before eating, drinking, or touching common items (phone, computer, etc.) to prevent cross contamination. Use this product with adequate ventilation. See product technical data sheet for details.

Storage: See product technical data sheet for details.

Specific use: See product technical data sheet for details.

SECTION 8 EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure Limit Values:	OSHA PEL	NIOSH REL	ACGIH TLV	Other
Inorganic buffer salts:	Not Listed	Not Listed	Not Listed	None
5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione:	Not Listed	Not Listed	Not Listed	None
Enhancers and stabilizers:	Not Listed	Not Listed	Not Listed	None

	Normal Handling Conditions	**Emergency Response Conditions**
Engineering Controls:	General room ventilation is adequate for the use of this product.	Provide negative pressure ventilation.
Respiratory Protection	Use appropriate respiratory protection.	Use appropriate respiratory protection.
Eye Protection:	Safety glasses with side shields.	Chemical splash goggles or other face protection as appropriate.
Skin Protection:	Laboratory coat, adequate chemical-resistant gloves.	Chemically resistant boots, clothes, and impermeable gloves as appropriate.
Environmental Exposure Controls:	Not Available.	Not Available.

Other Equipment: Safety shower, eyewash stations, and hand washing equipment should be available close to the work area as needed.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear Colorless Liquid	
Odor:	None	
Odor Threshold:	Not Available	
pH:	8-10	
Melting Point/Freezing Point:	Essentially that of Water	
Initial Boiling Point and Boiling Range:	Essentially that of Water	
Flash Point:	Not Available	
Evaporation Rate, 20 ºC:	Not Available	
Flammability (Solid/Gas):	Not Available	
Explosive Limits:	LEL: Not Available	UEL: Not Available
Vapor Pressure:	Not Available	
Vapor Density, 20 ºC:	Not Available	
Relative Density (Water = 1.0):	1.2 grams/ml.	
Solubility:	Soluble	
Partition Coefficient (n-octanol/water):	Not Available	

Auto Ignition Temperature (ASTM D1929): Not Available

Decomposition Temperature: Not Available

Oxidizing Properties: None

Viscosity, Centipoise: Not Available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: Product is stable under normal operating conditions and use as described in the product technical data sheet.

Conditions to Avoid: See product technical data sheet for details.

Incompatible Materials to Avoid: Strong acids or bases, strong oxidizers, and extreme temperatures.

Hazardous Decomposition Products: Heating to decomposition temperature may produce carbon monoxide, carbon dioxide, nitrogen oxides.

SECTION 11 TOXICOLOGICAL INFORMATION

Toxicology Data: Toxicological information for this product as a whole does not exist, below is data for the individual components.

5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione: RTECS #TH8890060

	Toxicity Test	Exposure Route	Dose	Observed Effect
Acute Toxicity:				
Inorganic buffer salts:	Not Available			
5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione:	LD (Rat)	Oral	> 500 mg/kg	N/A[1]
Enhancers and stabilizers:	Not Available			

Skin Corrosion/Irritation: Not Available

Serious Eye Damage/Eye Irritation: Not Available

Respiratory or Skin Sensitization: Not Available

Germ Cell Mutagenicity: Not Available

Reproductive Toxicity: Not Available

STOST-Single Exposure: Not Available

STOST-Repeated Exposure: Not Available

Aspiration Hazard: Not Available

Carcinogenicity: Carcinogenetic information for this product as a whole does not exist, below is data for the individual components.

Research Agency:	OSHA:	NTP:	IARC:
Inorganic buffer salts:	Not Listed	Not Listed	Not Listed
5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione:	Not Listed	Not Listed	Not Listed
Enhancers and stabilizers:	Not Listed	Not Listed	Not Listed

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity: Ecotoxicity information for this product as a whole does not exist, below is data for the individual components.

Inorganic buffer salts:	Not Available
5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione:	Not Available
Enhancers and stabilizers:	Not Available

Mobility: Not Available

Persistence and Degradation: Not Available

Bio Accumulative Potential: Not Available

Results of PBT Assessment: Not Available

Other Adverse Effects: None Known

SECTION 13 DISPOSAL INFORMATION

Substance: Dispose of unused contents in accordance with international, federal, state, and local regulations.

Contaminated Packaging: Dispose of container in accordance with international, federal, state and local requirements.

SECTION 14 TRANSPORTATION INFORMATION

UN Number: Not Listed

Class: Not Listed

Proper Shipping Name: Not Listed

Packing Group: Not Listed

Marine Pollutant: Not Listed

Other Applicable Information: None

SECTION 15 REGULATORY INFORMATION

Australia: Hazchem Code: Not Listed.

	Poisons Schedule Number:	Not Listed.
California:	Proposition 65 Listed:	Not Listed.
Canada:	WHMIS:	Not Listed.
European Union:	REACH:	Chemical Safety Assessment for the substance or substances in the preparation not required.
	Substances of Very High Concern (SVHC) - January 13, 2010:	This product does not contain SVHC's in concentrations above 0.1% weight/weight.
	Category of Danger:	None Applicable.
	Risk Phrases:	None Applicable.
	Safety Phrases:	S7/9: Keep container tightly closed and in a well-ventilated place. S20/21: When using do not eat, drink or smoke. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of soap and tepid water. S29/35: Do not empty into drains; dispose of this material and its container in a safe way. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately.
	OECD/High Production Volume (HPV) Chemicals:	Water.
	RoHS:	This product does not contain RoHS listed substances in concentrations above the established thresholds.
Japan:	Poisonous and Deleterious Substances Control Law:	Not Listed.

SECTION 16 ADDITIONAL INFORMATION

Component of Kit#:	**Product Name:**
WBKLS0050	Immobilon Western Chemiluminescent HRP Substrate 50 ml.
WBKLS0100	Immobilon Western Chemiluminescent HRP Substrate 100 ml.
WBKLS0500	Immobilon Western Chemiluminescent HRP Substrate 500 ml.

Training Advice: Seek effective chemical handling training to reduce the hazards associated with this product prior to use.

Technical Contact: http://www.millipore.com/support

Abbreviations Used

ACGIH	American Conference of Government Industrial Hygienists
ADR	European agreement on the international carriage of dangerous goods on road
CAS	Chemical Abstract Service

EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EPA	United States Environmental Protection Agency
IARC	International Agency for Research in Cancer.
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	Regulations regarding the transportation of dangerous goods on ocean-going vessels issued by the International Maritime Organization.
LC_{50}	Lethal Concentration 50% is the concentration of a chemical which kills 50% of a sample population
LD_{50}	Lethal Dose 50% is the dose of a chemical which kills 50% of a sample population.
LDLo	Lowest observed lethal dose
LEL	Lower Explosive Limit
MSFU	Manufacture, Formulation, Supply and Use (Section 13)
NIOSH	National Institute of Occupational Safety and Health (US)
NTP	National Toxicology Program (US)
OSHA	United States Occupational Safety and Health Administration
RID	International regulations concerning the international carriage of dangerous goods by rail.
RTECS	Registry of Toxic Effects of Chemical Substances (US)
STOST	Specific Target Organ Systemic Toxicity
UEL	Upper Explosive Limit
WHMIS	Workplace Hazardous Materials Information System (Canada)

This safety data sheet has been prepared to comply with the requirements of the European Union regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) 1906/2006 and ANSI standard Z400.1-1998.

[1]Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH) Registry of Toxic Effects of Chemicals Substances (RTECS) File #TH8890060, 2009.

Material Safety Data Sheet

MSDS/SDS Number: 00000368MSDS
Latest Revision Date: March 1, 2010
Revision: A

SECTION 1 IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: Peroxide Solution.
Catalogue Number(s): See Section 16.
Chemical Name: Aqueous solution of Hydrogen Peroxide and Inorganic Buffer Salts.
Synonyms: None.
Intended Product Use: Detection of Horseradish Peroxidase (HRP) for Research Purposes.

Manufacturer/Distributor:	Millipore Corporation (Corporate Headquarters)	Millipore S.A.S. (European Headquarters)
Postal Address:	290 Concord Road Billerica MA, 01821 USA	Boite Postale 116 Molsheim Cedex, 67124 France
Telephone Number:	+1-978-715-1335	+33(0)3 90 46 90 00
Hours of Operation:	9:00 am to 4:00 pm ET (GMT -4)	9:00 am to 4:00 pm EU CT (GMT +1)

Worldwide Offices: http://www.millipore.com/offices/cp3/officeshome
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CHEMTREC Emergency Telephone Number: International +1-703-527-3887 (collect)
North America 1-800-424-9300 (toll free)

SECTION 2 HAZARDS IDENTIFICATION

Globally Harmonized System of Classification and Labeling of Chemicals (GHS):

Symbol:

Hazard Category: 2A: Serious Eye Damage/Irritation
2: Skin Corrosion/Irritation

Signal Word: Warning

Hazard Statement: H315+320: Causes skin and eye irritation.

GHS Precautionary Statements:

Prevention: P264: Wash hands thoroughly after handling.
P280: Wear eye protection / face protection.

Response: P305+P351+P338: IF IN EYES: Wash cautiously with water for several minutes. Remove contact lens, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/ attention.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P332+P313: If skin irritation occurs: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.

Storage: P403+P233: Store in a well ventilated place. Keep container tightly closed.

Disposal: P501: Dispose of content/container in accordance with local regulations.

Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH):

Symbol:

Symbol Letter: Xi

Hazard: Irritant

Risk Phrase: R36/38: Irritating to eyes and skin.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Identification of Dangerous Components: This product contains the substances listed below, which are defined as dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard 29 CFR 1910.1200.

Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters*†	R Phrases** †
Hydrogen Peroxide:	231-765-0	7722-84-1	< 1 %	O C	R5 R8 R20/22 R35
Inorganic Buffer Salts:	Mixture	Mixture	< 5 %	N/A	N/A

Identification of Components Not Classified as Dangerous: This product contains the substances listed below, which are not defined as dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard 29 CFR 1910.1200.

Non-Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters *	R Phrases**
Water:	231-791-2	7732-18-5	> 94 %	N/A	N/A

* Symbol letters and categories of danger: **T+** = Very toxic, **T** = Toxic, **C** = Corrosive, **Xn** = Harmful, **Xi** = Irritant, **E** = Explosive, **F+** = Extremely flammable, **F** = Very flammable, **N** = Dangerous for the environment, **O** = Oxidising.

** The full text of each R phrase is listed in Section 15.

† Symbols letters and R Phrases are assigned to each dangerous component for the highest concentration range as defined in 67/548/EEC and 1999/45/EC.

SECTION 4 FIRST AID MEASURES

Treatment Measures: **Symptoms of Exposure:**

Contact with Eyes:	If the product contacts the eyes, promptly wash (irrigate) the eyes with large amounts of tepid water for at least 15 minutes, occasionally lifting the lower and upper lids. Seek medical attention immediately.	Possible eye irritation.
Ingestion:	Seek medical attention immediately. Never give an unconscious person anything by mouth.	Possible gastrointestinal irritation causing nausea and vomiting.
Inhalation:	If a person inhales large amounts of the product move the exposed person to fresh air at once. If breathing is difficult or stops seek immediate medical attention.	Possible respiratory tract and mucous membrane irritation.
Skin Contact:	If the product contacts the skin, immediately flush the contaminated skin with mild soap and water. If this chemical penetrates clothing immediately remove the clothing and flush the skin with water. Seek medical attention immediately.	Possible skin irritation.

SECTION 5 FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Use extinguishing media appropriate for the surrounding fire. This product is compatible with commercially available extinguishing media.

Special Protective Equipment for Firefighters: This product does not require the use of any additional fire fighting equipment beyond what is appropriate to the surrounding fire.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear chemical resistant boots, clothing, eye protection, and gloves to prevent skin contact (See Section 8).

Small Spills: Identify the spilled material(s). Barricade the spill area and notify others in the surrounding areas. Control all sources of ignition if the substance is flammable. Don the appropriate personal protective equipment (See section 8). Control the movement of the spilled product (into drains, soil, across floors etc.) with absorbent spill materials. Collect contaminated spill material and place in container meeting appropriate U.N. packaging requirements. Decontaminate used equipment and affected spill area appropriately.

Large Spills: In addition to small spill precautions, determine personnel evacuation distances. Notify appropriate authorities if necessary.

Environmental Precautions: Collect and dispose of contaminated materials according to international, federal, state and local regulations. Keep away from surface and ground water, drains, and soil.

SECTION 7 HANDLING AND STORAGE

Handling: Seek appropriate training to safely handle this product under normal conditions. Use the recommended personal protective equipment (See Section 8) to prevent chemical exposures. Wash hands with soap and water before eating, drinking, or touching common items (phone, computer, etc.) to prevent cross contamination. Use this product with adequate ventilation. See product technical data sheet for details.

Storage: See product technical data sheet for details.

Specific use: See product technical data sheet for details.

SECTION 8 EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure Limit Values:	OSHA PEL	NIOSH REL	ACGIH TLV	Other
Hydrogen Peroxide:	TWA 1 ppm (1.4 mg/m^3)	TWA 1 ppm (1.4 mg/m^3)	TWA 1 ppm (1.4 mg/m^3)	See Below
Australia:	TWA 1 ppm (1.4 mg/m^3), JUL2008			
Belgium:	TWA 1 ppm (1.4 mg/m^3), MAR2002			
Denmark:	TWA 1 ppm (1.4 mg/m^3), OCT 2002			
Finland:	TWA 1 ppm (1.4 mg/m^3), STEL 3 ppm (4.2 mg/m^3), JAN1999			
France:	VME 1 ppm (1.5 mg/m^3), FEB2006			
Germany:	MAK 0.71 mg/m3 (0.5 mL/m^3), 2005			
Korea:	TWA 1 ppm (1.5 mg/m^3), 2006			
Mexico:	TWA 1 ppm (1.5 mg/m^3);STEL 2 ppm (3 mg/m^3), 2004			
The Netherlands:	MAC-TGG 1.4 mg/m^3, 2003			
New Zealand:	TWA 1 ppm (1.4 mg/m^3), JAN2002			
Norway:	TWA 1 ppm (1.4 mg/m^3), JAN1999			
The Philippians:	TWA 1 ppm (1.4 mg/m^3), JAN1993			
Sweden:	TWA 1 ppm (1.4 mg/m^3), CL 2 ppm (3 mg/m^3), JUN2005			
Switzerland:	MAK-W 0.5 ppm (0.71 mg/m^3),KZG-W 0.5 ppm (0.71 mg/m^3) , DEC2006			
Turkey:	TWA 1 ppm (1.4 mg/m^3), JAN1993			
United Kingdom:	TWA 1 ppm (1.4 mg/m^3);STEL 2 ppm, 2005			
Inorganic Buffer Salts:	Not Listed	Not Listed	Not Listed	None

	Normal Handling Conditions	**Emergency Response Conditions**
Engineering Controls:	General room ventilation is adequate for the use of this product.	Provide negative pressure ventilation.
Respiratory Protection	Use appropriate respiratory protection.	Use appropriate respiratory protection.
Eye Protection:	Safety glasses with side shields.	Chemical splash goggles or other face protection as appropriate.
Skin Protection:	Laboratory coat, adequate chemical-resistant gloves.	Chemically resistant boots, clothes, and impermeable gloves as appropriate.
Environmental Exposure Controls:	Not Available.	Not Available.

Other Equipment: Safety shower, eyewash stations, and hand washing equipment should be available close to the work area as needed.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear Colorless Liquid	
Odor:	None	
Odor Threshold:	Not Available	
pH:	8-10	
Melting Point/Freezing Point:	Essentially that of Water	
Initial Boiling Point and Boiling Range:	Essentially that of Water	
Flash Point:	Not Available	
Evaporation Rate, 20 ºC:	Not Available	
Flammability (Solid/Gas):	Not Available	
Explosive Limits:	LEL: Not Available	UEL: Not Available
Vapor Pressure:	Not Available	
Vapor Density, 20 ºC:	Not Available	
Relative Density (Water = 1.0):	1.2 grams/ml.	
Solubility:	Soluble	
Partition Coefficient (n-octanol/water):	Not Available	
Auto Ignition Temperature (ASTM D1929):	Not Available	
Decomposition Temperature:	Not Available	
Oxidizing Properties:	Mild Oxidizing Agent	
Viscosity, Centipoise:	Not Available	

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability:	Product is stable under normal operating conditions and use as described in the product technical data sheet.
Conditions to Avoid:	See product technical data sheet for details.
Incompatible Materials to Avoid:	Strong acids or bases, strong oxidizers, and extreme temperatures. reducing agents, organic materials, dirt, rust, and many metals.
Hazardous Decomposition Products:	Decomposes to water and oxygen.

SECTION 11 TOXICOLOGICAL INFORMATION

Toxicology Data: Toxicological information for this product as a whole does not exist, below is data for the individual components.

Hydrogen Peroxide: RTECS #MX0888000

	Toxicity Test	Exposure Route	Dose	Observed Effect
Acute Toxicity:				
Hydrogen Peroxide:	LD_{50} (Rat)	Inhalation	2,000 mg/m^3/4H	Pulmonary Embolism[1]
	LD_{50} (Rat)	Dermal	4,060 mg/kg	Pulmonary Embolism[1]
	LD_{50} (Rat)	Oral	376 mg/kg	Peritonitis ;Pigmented or nucleated red blood cells ;Changes in leukocyte (WBC) count[1]
Inorganic Buffer Salts:	Not Available			
Skin Corrosion/Irritation:	Not Available			
Serious Eye Damage/Eye Irritation:				
Hydrogen Peroxide:	Eye Irritation	Eye	1 mg	Severe[1]
Respiratory or Skin Sensitization:	Not Available			
Germ Cell Mutagenicity:	Not Available			
Reproductive Toxicity:	Not Available			
STOST-Single Exposure:	Not Available			
STOST-Repeated Exposure:	Not Available			
Aspiration Hazard:	Not Available			

Carcinogenicity: Carcinogenetic information for this product as a whole does not exist, below is data for the individual components.

Research Agency:	OSHA:	NTP:	IARC:
Hydrogen Peroxide:	Not Listed	Not Listed	Group 3
Inorganic Buffer Salts:	Not Listed	Not Listed	Not Listed

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity: Ecotoxicity information for this product as a whole does not exist, below is data for the individual components.

Hydrogen Peroxide: LC_{50} Lepomis Macrochirus (juvenile) 96 hours 26,700 ug/L[2]

LC_{50} Oncorhynchus Mykis 60 minutes 329,000 ug/L[3]

LC_{50} Stizostedion Vitreum 4.5 hours 145,100 ug/L[4]

Inorganic Buffer Salts: Not Listed

Mobility:

Hydrogen Peroxide: Air: Hydrogen peroxide may be removed from the atmosphere by photolysis giving rise to hydroxyl radicals, by reaction with hydroxyl radicals, or by heterogenous loss processes such as rain-out [5]

Soil: No information was found in the secondary sources searched regarding the transformation or persistence of hydrogen peroxide in soil, however, solutions of hydrogen peroxide gradually deteriorate[6].

Water: Hydrogen peroxide is a naturally occurring substance. Surface water concentrations of hydrogen peroxide have been found to vary between 51-231 mg/L, increasing both with exposure to sunlight and the presence of dissolved organic matter.[6]

Biota: Hydrogen peroxide is a naturally occurring substance. Endogenous hydrogen peroxide has been found in plant tissues at the following levels (mg/kg frozen weight): potato tubers, 7.6; green tomatoes, 3.5; red tomatoes, 3.5; and castor beans in water, 4.7.[6]

Persistence and Degradation:

Hydrogen Peroxide: No information was found in the secondary sources searched regarding the environmental release of hydrogen peroxide. Solutions of hydrogen peroxide gradually deteriorate.[6]

Bio Accumulative Potential:

Hydrogen Peroxide: Hydrogen peroxide is a naturally occurring substance. Gaseous hydrogen peroxide is recognized to be a key component and product of the earth's lower atmospheric photochemical reactions, in both clean and polluted atmospheres. Atmospheric hydrogen peroxide is also believed to be generated by gas-phase photochemical reactions in the remote troposphere.[6]

Results of PBT Assessment: Not Available

Other Adverse Effects: None Known

SECTION 13 DISPOSAL INFORMATION

Substance: Dispose of unused contents in accordance with international, federal, state, and local regulations.

Contaminated Packaging: Dispose of container in accordance with international, federal, state and local requirements.

SECTION 14 TRANSPORTATION INFORMATION

UN Number: Not Listed

Class: Not Listed

Proper Shipping Name: Not Listed

Packing Group: Not Listed

Marine Pollutant: Not Listed

Other Applicable Information: None

SECTION 15 REGULATORY INFORMATION

Australia:	Hazchem Code:	Not Listed.
	Poisons Schedule Number:	Not Listed.
California:	Proposition 65 Listed:	Not Listed.
Canada:	WHMIS:	C, D2B.
European Union:	REACH:	Chemical Safety Assessment for the substance or substances in the preparation not required.
	Substances of Very High Concern (SVHC) - January 13, 2010:	This product does not contain SVHC's in concentrations above 0.1% weight/weight.
	Category of Danger:	O: Oxidizing. C: Corrosive. Xi: Irritant.
	Risk Phrases:	R5: Heating may cause an explosion. R8: Contact with combustible material may cause fire. R20/22: Harmful by inhalation and if swallowed. R35: Causes severe burns. R36/38: Irritating to eyes and skin.
	Safety Phrases:	S7/9: Keep container tightly closed and in a well-ventilated place. S20/21: When using do not eat, drink or smoke. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of soap and tepid water. S29/35: Do not empty into drains; dispose of this material and its container in a safe way. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately.
	OECD/High Production Volume (HPV) Chemicals:	Hydrogen Peroxide and Water.
	RoHS:	This product does not contain RoHS listed substances in concentrations above the established thresholds.
Japan:	Poisonous and Deleterious Substances Control Law:	Hydrogen Peroixde: Deleterious Substance.

SECTION 16 ADDITIONAL INFORMATION

Component of Kit #:	**Product Name:**
WBKLS0050	Immobilon Western Chemiluminescent HRP Substrate 50 ml.
WBKLS0100	Immobilon Western Chemiluminescent HRP Substrate 100 ml.
WBKLS0500	Immobilon Western Chemiluminescent HRP Substrate 500 ml.

Training Advice: Seek effective chemical handling training to reduce the hazards associated with this product prior to use.

Technical Contact: http://www.millipore.com/support

Abbreviations Used

ACGIH	American Conference of Government Industrial Hygienists
ADR	European agreement on the international carriage of dangerous goods on road
CAS	Chemical Abstract Service
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EPA	United States Environmental Protection Agency
IARC	International Agency for Research in Cancer.
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	Regulations regarding the transportation of dangerous goods on ocean-going vessels issued by the International Maritime Organization.
LC_{50}	Lethal Concentration 50% is the concentration of a chemical which kills 50% of a sample population
LD_{50}	Lethal Dose 50% is the dose of a chemical which kills 50% of a sample population.
LDLo	Lowest observed lethal dose
LEL	Lower Explosive Limit
MSFU	Manufacture, Formulation, Supply and Use (Section 13)
NIOSH	National Institute of Occupational Safety and Health (US)
NTP	National Toxicology Program (US)
OSHA	United States Occupational Safety and Health Administration
RID	International regulations concerning the international carriage of dangerous goods by rail.
RTECS	Registry of Toxic Effects of Chemical Substances (US)
STOST	Specific Target Organ Systemic Toxicity
UEL	Upper Explosive Limit
WHMIS	Workplace Hazardous Materials Information System (Canada)

This safety data sheet has been prepared to comply with the requirements of the European Union regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) 1906/2006 and ANSI standard Z400.1-1998.

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[1]Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry for Toxic Effects of Chemical Substances (RTECS) File #MX0888000, 2009.

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[3] Arndt, R.E., and E.J. Wagner, The Toxicity of Hydrogen Peroxide to Rainbow Trout Oncorhynchus mykiss and Cutthroat Trout Oncorhynchus clarki Fry and Fingerlings, J.World Aquacult.Soc. 28(2):150-157, 1997.

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Peroxides, Vol. 36. IARC, Lyon, pp. 285-314.
[6] Budavari S, O'Neil MJ, Smith A, Heckelman PE (Eds.). 1989. *The Merck Index*, 11th ed. Merck & Co., Inc., Rahway, NJ, p. 760.