



## 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)  
**Postal Address:** 290 Concord Road Billerica MA, 01821 USA      Boite Postale 116 Molsheim Cedex, 67124 France  
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**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:** *None Applicable.*  
**Signal Word:** *None Applicable.*  
*No Symbol*      **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:** **Symbol Letter:** *None Applicable.*  
**Hazard:** *None Applicable.*  
*No Symbol*  
**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, **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:
<b>Contact with Eyes:</b>	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.
<b>Ingestion:</b>	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

<b>Exposure Limit Values:</b>	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**

<b>Engineering Controls:</b>	General room ventilation is adequate for the use of this product.	Provide negative pressure ventilation.
<b>Respiratory Protection</b>	Use appropriate respiratory protection.	Use appropriate respiratory protection.
<b>Eye Protection:</b>	Safety glasses with side shields.	Chemical splash goggles or other face protection as appropriate.
<b>Skin Protection:</b>	Laboratory coat, adequate chemical-resistant gloves.	Chemically resistant boots, clothes, and impermeable gloves as appropriate.
<b>Environmental Exposure Controls:</b>	Not Available.	Not Available.
<b>Other Equipment:</b>	Safety shower, eyewash stations, and hand washing equipment should be available close to the work area as needed.	

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Clear Colorless Liquid	
<b>Odor:</b>	None	
<b>Odor Threshold:</b>	Not Available	
<b>pH:</b>	8-10	
<b>Melting Point/Freezing Point:</b>	Essentially that of Water	
<b>Initial Boiling Point and Boiling Range:</b>	Essentially that of Water	
<b>Flash Point:</b>	Not Available	
<b>Evaporation Rate, 20 °C:</b>	Not Available	
<b>Flammability (Solid/Gas):</b>	Not Available	
<b>Explosive Limits:</b>	LEL: Not Available	UEL: Not Available
<b>Vapor Pressure:</b>	Not Available	
<b>Vapor Density, 20 °C:</b>	Not Available	
<b>Relative Density (Water = 1.0):</b>	1.2 grams/ml.	
<b>Solubility:</b>	Soluble	
<b>Partition Coefficient (n-octanol/water):</b>	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
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### 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 <sup>1</sup>

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.

<b>Research Agency:</b>	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

<b>Ecotoxicity:</b>	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
<b>Mobility:</b>	Not Available
<b>Persistence and Degradation:</b>	Not Available
<b>Bio Accumulative Potential:</b>	Not Available
<b>Results of PBT Assessment:</b>	Not Available
<b>Other Adverse Effects:</b>	None Known

## SECTION 13 DISPOSAL INFORMATION

<b>Substance:</b>	Dispose of unused contents in accordance with international, federal, state, and local regulations.
<b>Contaminated Packaging:</b>	Dispose of container in accordance with international, federal, state and local requirements.

## SECTION 14 TRANSPORTATION INFORMATION

<b>UN Number:</b>	Not Listed
<b>Class:</b>	Not Listed
<b>Proper Shipping Name:</b>	Not Listed
<b>Packing Group:</b>	Not Listed
<b>Marine Pollutant:</b>	Not Listed
<b>Other Applicable Information:</b>	None

## SECTION 15 REGULATORY INFORMATION

<b>Australia:</b>	Hazchem Code: Not Listed.
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	Poisons Schedule Number:	Not Listed.
<b>California:</b>	Proposition 65 Listed:	Not Listed.
<b>Canada:</b>	WHMIS:	Not Listed.
<b>European Union:</b>	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.
<b>Japan:</b>	Poisonous and Deleterious Substances Control Law:	Not Listed.

## SECTION 16 ADDITIONAL INFORMATION

<b>Component of Kit#:</b>	<b>Product Name:</b>
WBKLS0050	Immobilon Western Chemiluminescent HRP Substrate 50 ml.
WBKLS0100	Immobilon Western Chemiluminescent HRP Substrate 100 ml.
WBKLS0500	Immobilon Western Chemiluminescent HRP Substrate 500 ml.
<b>Training Advice:</b>	Seek effective chemical handling training to reduce the hazards associated with this product prior to use.
<b>Technical Contact:</b>	<a href="http://www.millipore.com/support">http://www.millipore.com/support</a>

<b>Abbreviations Used</b>	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 <sub>50</sub>	Lethal Concentration 50% is the concentration of a chemical which kills 50% of a sample population
LD <sub>50</sub>	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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<sup>1</sup>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.