

1. Product and Company Identification

1.1	Product name	Hemoglobin Reagent (R1 + R2)
	Substance/mixture	Mixture
	CAS #	Mixture
	Kit number	MD-101106
1.2	Recommended product use	
	Mixture's intended use	Diagnostic reagent for IN VITRO quantitative measurement of hemoglobin in urine.
	Product restrictions	None known
1.3	Details of the supplier of the safety data sheet	
	Manufacturer information	
	Corporate Headquarters	Diamond Diagnostics Inc. 333 Fiske St., Holliston, MA 01746 United States of America www.diamonddiagnostics.com
	Telephone	+1 (508) 429-0450
	Email	support@diamonddiagnostics.com
	Distributor information	
	Distributor Headquarters	Mission Diagnostics LLC 1 Burton Dr., Meridith, NH 03246 United States of America
	Telephone	+1 (508) 429-0450
	Email	support@diamonddiagnostics.com
1.4	Emergency Telephone	
	Emergency Phone #	+1 (508) 429-0450

2. Hazards Identification

GHS- Classification

Classification Skin Irritant, Eye Irritant



2.1 Substance or mixture classification

Physical state	Liquid
Appearance	(R1) Green Solution (R2) Clear to red tinged Solution
Emergency overview	Keep away from all sources of ignition, product may be combustible and/or flammable. Do not ingest or inhale product in any way, obtain medical attention if so. Always wear gloves and goggles while handling product. Do not allow to enter drains or sewers.

2.2 Label Elements

Signal word	Danger
Hazardous substances	(R1) Dimethyl sulfoxide , 3,3',5,5'-Tetramethylbenzidine, Acetic Acid (R2) Hydrogen peroxide solution, acetanilide.

OSHA regulatory status		This product is hazardous according to OSHA 29CFR 1910.1200.
2.3 Potential health effects		
Routes of exposure	Skin contact. Eye contact.	
Eyes	May cause eye irritation or serious eye damage.	
Skin	May cause skin irritation or skin burns.	
Inhalation	In high concentrations, vapors may be irritating to the upper respiratory tract leading to chemical pneumonitis and pulmonary edema.	
Ingestion	If swallowed, may cause discomfort and lead to gastrointestinal tract burns.	
Target organs	Eyes, lungs and skin.	
Chronic effects	Repeated skin contact may cause dermatitis.	
Signs and symptoms	Direct contact with skin and eyes may cause irritation.	
2.4 Potential environmental effects	The product components are not classified as environmentally hazardous. However, this does not eliminate the possibility that large or frequent spills can have a harmful or damaging impact on the environment.	

Hazard Statements

H315	Causes skin irritation and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation

Precautionary Statements

P234	Keep in original container.
P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P391	Collect spillage.
P501	Dispose of contents/container to an approved waste disposal plant.

3. Composition/Information on ingredients

Components:

Chemical name	CAS-No.	Classification	Concentration (% w/w)
Dimethyl sulfoxide	67-68-5	Flammable liquids (Category 4), H227	<32.0%
3,3',5,5'-Tetramethylbenzidine	54827-17-7	Acute toxicity, Oral (Category 4), H302 Carcinogenicity (Category 2), H351 Long-term (chronic) aquatic hazard (Category 4), H413	<0.05%
Acetic Acid	64-19-7	Flammable liquids (Category 3), H226 Skin corrosion (Category 1A), H314 Serious eye damage (Category 1), H318	<35.0%

Chemical name	CAS-No.	Classification	Concentration (% w/w)
Hydrogen Peroxide solution	7722-84-1	Serious eye damage (Category 1), H318 Short-term (acute) aquatic hazard (Category 2), H401 Long-term (chronic) aquatic hazard (Category 3), H412	<2.0%
Acetanilide	103-84-4	Acute toxicity, Oral (Category 4), H302 Short-term (acute) aquatic hazard (Category 3), H402	<0.05%

4. First Aid Measures

4.1 Description of First Aid Measures

Eye Contact	In case of eye contact, immediately flush eyes with fresh water for at least 15 minutes while holding eyelids open. Remove contact lenses immediately if worn by the affected person. Pursue medical treatment if irritation persists.
Skin Contact	In case of skin contact, remove any or all of contaminated clothing, while rinsing the affected skin with large amounts of water. Pursue medical attention if irritation develops and persists.
Inhalation	In case of inhalation, move the affected person to fresh air. Call a physician if symptoms develop or persist.
Ingestion	Do NOT induce vomiting. In case of ingestion, make the affected person either drink some water or rinse out their mouth. If any other symptoms persist, contact a medical professional or a poison control center.
Notes to Physician	Provide general supportive measures and treat symptomatically.
General Advice	If you feel unwell, seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Eye Contact	Causes serious eye damage
Skin Contact	Causes skin irritation
Inhalation	Causes corrosion of the breathing system
Ingestion	Causes corrosion of the digestion system

5. Fire-Fighting Measures

- 5.1 Flammable properties** This product is not flammable.
- 5.2 Extinguishing media**
- Suitable extinguishing media**
 Extinguish with water spray, carbon dioxide (CO₂), dry chemical or material appropriate for the surrounding fire.
- Unsuitable extinguishing media**
 No limitations are given.
- 5.3 Protection of firefighters**
- Specific hazards arising from the chemical**
 Carbon oxides
 Sulfur oxides
 Nitrogen oxides (NO_x)
 Sodium oxides

Protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Firefighting equipment/instructions

Use standard firefighting procedures and consider the hazards of other involved materials.
 Avoid contaminating surface water with fire extinguishing water.

Hazardous combustion Products

Hazardous combustion gases or vapors may develop in the event of fire.

6. Accidental Release Measures

- 6.1 Personal precautions** Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- 6.2 Environmental precautions** Avoid contamination to enter drains, sewers or watercourses.
- 6.3 Methods for containment and cleaning up**
 Absorb spillage with non-combustible, absorbent material such as sand, diatomaceous earth, vermiculite or other inert material. Dispose of waste in accordance with all applicable federal, state, local and provincial environmental regulations, per Section 13.
- 6.4 Other information** Clean up in accordance with all applicable regulations.

7. Handling and Storage

- 7.1 Safe Handling** Avoid contact with skin and eyes. In case of insufficient ventilation, wear suitable respiratory equipment. Handle and open container with care.
- Hygiene Measures** Wash exposed skin thoroughly after handling
- 7.2 Storage** Store at 2-8°C. Store in a closed container away from incompatible materials.
- 7.3 Specific use** See section 1 – Recommended Use

8. Exposure Controls / Personnel

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Dimethyl sulfoxide 67-68-5	Not Listed	Not Listed	Not Listed
3,3',5,5'- Tetramethylbenzidine 54827-17-7	Not Listed	Not Listed	Not Listed
Acetic Acid 64-19-7	C 25.000000 mg/m3	C 25.000000 mg/m3	C 25.000000 mg/m3
Hydrogen Peroxide solution 7722-84-1	C 1.400000 mg/m3	C 1.400000 mg/m3	C 1.400000 mg/m3
Acetanilide 103-84-4	Not Listed	Not Listed	Not Listed

- 8.1 Occupational exposure limits**
 No exposure limits noted for ingredient(s).
- Exposure guidelines** Follow standard monitoring procedures.
- Engineering controls** Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Provide easy access to water supply and eye wash facilities.
- 8.2 Personal protective equipment**
- Eye / face protection** Wear appropriate safety glasses, goggles or face shields.
- Skin protection** Wear lab coat or other protective garments. Wear protective gloves. Remove any contaminated clothing promptly.

Respiratory protection	Under normal conditions, respirator is not required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.
Other information	Do NOT eat, drink or smoke during use.
Environment Exposure	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid
Physical state	Liquid
Form	Liquid
Color	(R1) Green (R2) Clear to red tinged
Odor	Odorless
Odor threshold	No data available
pH	10-12 @ (25°C)
Vapor pressure	No data available
Vapor density	No data available
Boiling point	No data available
Viscosity (mm²/s)	No data available
Melting/Freezing point	No data available
Solubility (water)	Soluble
Specific gravity	1-1.1
Flash point	No data available
Flammability limits in air, upper, % by volume	No data available
Flammability limits in air, lower, % by volume	No data available
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Evaporation rate	No data available
Relative Density	No data available
Partition coefficient: (n-octanol/water)	No data available
Explosive properties	No data available
Oxidizing properties	No data available

10. Stability and Reactivity

10.1 Reactivity	No data available
10.2 Chemical stability	Material is stable under normal conditions.
10.3 Possibility of hazardous Reactions	Hazardous polymerization does not occur.
10.4 Conditions to avoid	No data available
10.5 Incompatible materials	No data available
10.6 Hazardous decomposition Products	In the event of fire, refer to Section 5.3

11. Toxicological Information

11.1 Information on toxicological effects

Sensitization	Not classified
Acute effects	May cause discomfort if swallowed.
Local effects	Ingestion may cause irritation and nausea.
Chronic effects	No data available
Target Organ Effects	No data available
Carcinogenicity	Not classified to carcinogenicity to humans.
Epidemiology	No epidemiological data is available for this product.
Mutagenicity	Not classified
Reproductive effects	Not classified
Symptoms and target organs	Direct contact with skin and eyes may cause irritation.
Additional information	No other specific acute or chronic health impact noted.

12. Ecological Information

12.1 Toxicity

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.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

12.2 Persistence and degradability

No data is available on the degradability of this product.

12.3 Bioaccumulation/Accumulation

No data available

12.4 Mobility in environmental media

The product is completely soluble in water.

13. Disposal Considerations

13.1 Disposal methods

Disposal instructions	Contaminated instruments and surfaces should be disinfected in accordance with your employer's chemical-specific and universal/standard precautions.
Waste from residues / unused products	Dispose in accordance with all applicable local and national regulations. Avoid releasing unused products into drainage systems and/or into the environment.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

DOT	Not regulated as a hazardous material by DOT.
DOR	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
TDG	Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations	This product is hazardous according to OSHA 29CFR 1910.1200. This mixture is a component of an in vitro diagnostic device regulated by the U.S. Food and Drug Administration.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpart. D)	Not regulated.
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not regulated.
CERCLA (Superfund) reportable quantity (lb.) (40 CFR 302.4)	None
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
Section 302 extremely Hazardous substance (40 CFR 355, Appendix A) Section 311/312 (40 CFR370)	No
	No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)

Not controlled

Canadian regulations

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status

Non-controlled

Inventory status
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	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	
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)

State regulations

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

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Not regulated.

Mexico regulations

This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

16. Other Information

Recommended restrictions	Use in accordance with supplier's recommendations.
Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 0 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 0 Flammability: 0 Instability: 0

Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in text.