

SAFETY DATA SHEET



Conforms to regulation (EC) no. EU 453/2010

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name: Hydrogen Peroxide Assay Kit - Reagent B

Product Number: CL-204B

1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users

1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer

National Diagnostics
305 Patton Drive
Atlanta, GA 30036
(404) 699-2121
(800) 526-3867
info@nationaldiagnostics.com

1.4 Emergency Telephone Number

ChemTel Inc.

Contract number MIS8894340
1-800 255-3924 (United States, Canada, Puerto Rico & US Virgin Islands)
01-800-099-0731 (Mexico)
400-120-0751 (China)
000-800-100-4086 (India)
1-300-954-583 (Australia)
0-800-591-6042 (Brazil)
+1-813-255-3924 (All other regions)

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

H315 - Skin Corrosion/Irritation (Category 2)
H319 - Serious Eye Damage/Eye Irritation (Category 2A)

2.2 Label Elements

GHS LABEL ELEMENTS AND CLASSIFICATION

GHS Label Elements



WARNING

H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
P264 - Wash skin thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P332+P313 - IF SKIN irritation occurs: Get medical advice/attention.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses if present and easy to do. Continue rinsing.

2.3 Other Hazards

None found.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

Chemical Names/Description

14% solution of sulfuric acid with 1% ammonium ferrous sulfate

Component List

Component	% Comp.	CAS #	EC #	1278/2008 Classification
SULFURIC ACID	14	7664-93-9	231-639-5	H315, H319
AMMONIUM IRON II SULFATE HEXAHYDRATE	1	7783-85-9	233-151-8	H315, H319, H335

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

Ingestion

DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Excess acid on skin can be neutralized with a 2% solution of bicarbonate of soda.

Eyes

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Inhalation

SULFURIC ACID:

Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, and labored breathing. May cause lung edema, a medical emergency.

AMMONIUM IRON II SULFATE HEXAHYDRATE:

Coughing, shortness of breath.

Ingestion

SULFURIC ACID:

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach, leading to death. Can cause sore throat, vomiting, diarrhea. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow ingestion or skin contact. Circulatory shock is often the immediate cause of death.

AMMONIUM IRON II SULFATE HEXAHYDRATE:

Symptoms may include nausea, vomiting and diarrhea.

Skin

SULFURIC ACID:

Corrosive. Symptoms of redness, pain, and severe burn can occur. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow skin contact or ingestion. Circulatory shock is often the immediate cause of death.

AMMONIUM IRON II SULFATE HEXAHYDRATE:

Redness, itching, and pain.

Eyes

SULFURIC ACID:

Corrosive. Contact can cause blurred vision, redness, pain and severe tissue burns. Can cause blindness.

AMMONIUM IRON II SULFATE HEXAHYDRATE:

Irritation, redness, and pain.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Unknown/not applicable

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry chemical, foam or carbon dioxide. Do not use water on material. However, water spray may be used to keep fire exposed containers cool.

5.2 Special Hazards Arising from the Substance/Mixture

Hazardous Combustion Products

Contact with most metals causes formation of flammable and explosive hydrogen gas.

Hazardous Decomposition Products

Toxic fumes of oxides of sulfur when heated to decomposition. Will react with water or steam to produce toxic and corrosive fumes. Reacts with carbonates to generate carbon dioxide gas, and with cyanides and sulfide to form poisonous hydrogen cyanide and hydrogen sulfide respectively.

Hazardous Polymerization

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

5.3 Advice for Firefighters

Full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in positive pressure mode. Structural firefighter's protective clothing is ineffective for fires

5.4 Further Information

No data available.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

Wear appropriate protective equipment as specified in Section 8.

6.2 Environmental Precautions

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

6.3 Methods and Materials for Containment and Cleaning Up

Ventilate area. Wear personal protective equipment as specified in Section 8. Isolate hazard area. Neutralize material with dry lime or soda ash, absorb with inert material (vermiculite, sand), keep in a closed container and hold for waste disposal.

6.4 References to Other Sections

For disposal information, see Section 13. For protective clothing and equipment, see Section 8.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. Wear special protective equipment (Sec. 8) where exposures may exceed established levels.

7.2 Conditions for Safe Storage (including any incompatibles)

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials.

Incompatibles

SULFURIC ACID:

Acetic Anhydride, Acetone Cyanhydrin, Acetone + Nitric Acid, Acetone + Potassium Dichromate, Acetonitrile, Acrolein, Acrylonitrile, Alcohols + Hydrogen Peroxide, Allyl Alcohol, Allyl Chloride, 2-Aminoethanol, Ammonium Hydroxide, Ammonium Triperchromate, Aniline, Bromates + Metals, Bromine Pentafluoride, n-Butyraldehyde, Carbides, Cesium Acetylene Carbide, Chlorates, Chlorine Trifluoride, Chlorosulfonic Acid, Cuprous Nitride, Diisobutylene, Epichlorohydrin, Ethylene Cyanohydrin, Ethylene Diamine, Ethylene Glycol, Ethylenimine, Fulminates, Other Acids, Iodine Heptafluoride, Metals, Isoprene, Lithium Silicide, Mercuric Nitride, Mesityl Oxide, P-Nitrotoluene, Pentasilver Trihydroxydiaminophosphate, Perchlorates, Permanganates + Benzene, Phosphorus, Phosphorus Isocyanate, Picrates, Potassium t-Butoxide, Potassium Chlorate, Permanganates, beta-Propiolactone, Propylene Oxide, Pyridine, Rubidium Acetylene Carbide and Sodium.

AMMONIUM IRON II SULFATE HEXAHYDRATE:

Strong oxidizing agents.

7.3 Specific End Uses

Investigational research by professional users

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

8.1 Control Parameters

Component: SULFURIC ACID

ACGIH Threshold Limit Value (TLV): 1 mg/m³ TWA 15 mg/m³ IDLH

OSHA Permissible Exposure Limit (PEL): 1 mg/m³ TWA

Component: AMMONIUM IRON II SULFATE HEXAHYDRATE

ACGIH Threshold Limit Value (TLV): 1 mg/m³ (TWA)

OSHA Permissible Exposure Limit (PEL): None established

8.2 Exposure Controls

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

Respiratory Protection

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece respirator with an acid gas cartridge and particulate filter (NIOSH type N100 filter) may be worn up to 50 times the exposure limit.

Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical & Chemical Properties

a. Appearance	Clear colorless solution	b. Odor	None
c. Odor Threshold	N.A.	d. pH	<1

e. Melting/Freezing Point (°C)	-7	f. Boiling point (°C)	106
g. Flash Point (°C)	N.A.	h. Evaporation Rate	No data
i. Flammability	N.A.	j. Upper/Lower Flammability or Explosive Limits	NA
k. Vapor Pressure	1 @ 145.8C	l. Vapor Density (Air = 1)	3.4
m. Relative Density	1.1	n. Water Solubility	Miscible with water
o. Partition Coefficient n-octanol/water	mixture	p. Autoignition Temperature (°C)	N.A.
q. Decomposition Temperature (°C)	N.A.	r. Viscosity	No data available.
s. Explosive Properties	N.A.	t. Oxidizing Properties	Contains sulfuric acid

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

Strong acid solution- will react violently with alkali. Oxidizer- will react with reductants, will corrode metals.

10.2 Chemical Stability

Stable under recommended conditions of use and storage.

10.3 Possibility of Hazardous Reactions

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

10.4 Conditions to Avoid

Heat, moisture, incompatibles.

10.5 Incompatible Materials

SULFURIC ACID:

Acetic Anhydride, Acetone Cyanhydrin, Acetone + Nitric Acid, Acetone + Potassium Dichromate, Acetonitrile, Acrolein, Acrylonitrile, Alcohols + Hydrogen Peroxide, Allyl Alcohol, Allyl Chloride, 2-Aminoethanol, Ammonium Hydroxide, Ammonium Triperchromate, Aniline, Bromates + Metals, Bromine Pentafluoride, n-Butyraldehyde, Carbides, Cesium Acetylene Carbide, Chlorates, Chlorine Trifluoride, Chlorosulfonic Acid, Cuprous Nitride, Diisobutylene, Epichlorohydrin, Ethylene Cyanohydrin, Ethylene Diamine, Ethylene Glycol, Ethylenimine, Fulminates, Other Acids, Iodine Heptafluoride, Metals, Isoprene, Lithium Silicide, Mercuric Nitride, Mesityl Oxide, P-Nitrotoluene, Pentasilver Trihydroxydiaminophosphate, Perchlorates, Permanganates + Benzene, Phosphorus, Phosphorus Isocyanate, Picrates, Potassium t-Butoxide, Potassium Chlorate, Permanganates, beta-Propiolactone, Propylene Oxide, Pyridine, Rubidium Acetylene Carbide and Sodium.

AMMONIUM IRON II SULFATE HEXAHYDRATE:

Strong oxidizing agents.

10.6 Hazardous Decomposition Products

Toxic fumes of oxides of sulfur when heated to decomposition. Will react with water or steam to produce toxic and corrosive fumes. Reacts with carbonates to generate carbon dioxide gas, and with cyanides and sulfide to form poisonous hydrogen cyanide and hydrogen sulfide respectively.

SECTION 11 - TOXICOLOGICAL INFORMATION

Product LD50 Values

Oral Rat LD50 (mg/kg)

2140

Dermal Rabbit LD50 (mg/kg)

No data.

Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
SULFURIC ACID	Yes	Yes	1
AMMONIUM IRON II SULFATE HEXAHYDRATE	No	No	None

Potential Health Effects

Inhalation

SULFURIC ACID

Harmful if inhaled. May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. Causes chemical burns to the respiratory tract.

AMMONIUM IRON II SULFATE HEXAHYDRATE

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Ingestion

SULFURIC ACID

May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns.

AMMONIUM IRON II SULFATE HEXAHYDRATE

Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Low toxicity in small quantities but larger dosages may cause nausea, vomiting, diarrhea, and black stool. Pink urine discoloration is a strong indicator of iron poisoning. Liver damage, coma, and death from iron poisoning has been recorded.

Skin

SULFURIC ACID

Causes skin burns.

AMMONIUM IRON II SULFATE HEXAHYDRATE

Causes irritation to skin. Symptoms include redness, itching, and pain.

Eyes

SULFURIC ACID

Causes severe eye burns. May cause irreversible eye injury.

AMMONIUM IRON II SULFATE HEXAHYDRATE

Causes irritation, redness, and pain.

Carcinogenicity

SULFURIC ACID

Chronic exposure to mists containing sulfuric acid is a cancer hazard. Cancer Status: The International Agency for Research on Cancer (IARC) has classified strong inorganic acid mists containing sulfuric acid as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

AMMONIUM IRON II SULFATE HEXAHYDRATE

Not listed as a known or anticipated carcinogen by NTP or IARC.

Mutagenicity

SULFURIC ACID

No information found.

AMMONIUM IRON II SULFATE HEXAHYDRATE

No information found.

Reproductive Toxicity

SULFURIC ACID

No information found.

AMMONIUM IRON II SULFATE HEXAHYDRATE

No information found.

Teratogenic Effects

SULFURIC ACID

No information found.

AMMONIUM IRON II SULFATE HEXAHYDRATE

No information found.

Routes of Entry

SULFURIC ACID

Ingestion, Inhalation, or through the skin.

AMMONIUM IRON II SULFATE HEXAHYDRATE

Ingestion, Inhalation, or through the skin.

Target Organ Statement

SULFURIC ACID

No information found.

AMMONIUM IRON II SULFATE HEXAHYDRATE

No information found.

SECTION 12 - ECOLOGICAL INFOMATION

12.1 Toxicity

COMPONENT: SULFURIC ACID

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	LC50(96 hr, bluegill) pH 3.5	EC50 (daphnia) >100mg/L	EC50 (72hr) >100mg/L	NOEC (3 hrs) >180mg/L
	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

COMPONENT: AMMONIUM IRON II SULFATE HEXAHYDRATE

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

12.2 Persistence and Degradability

SULFURIC ACID
No data

AMMONIUM IRON II SULFATE HEXAHYDRATE
No data

12.3 Bioaccumulative Potential

SULFURIC ACID
No data

AMMONIUM IRON II SULFATE HEXAHYDRATE
No data

12.4 Mobility in Soil

SULFURIC ACID
No data

AMMONIUM IRON II SULFATE HEXAHYDRATE
No data

12.5 Results of PBT and vPvB Assessment

SULFURIC ACID
Not PBT or vPvB

AMMONIUM IRON II SULFATE HEXAHYDRATE
No data

12.6 Other Adverse Effects

SULFURIC ACID
None

AMMONIUM IRON II SULFATE HEXAHYDRATE
None

SECTION 13 - DISPOSAL CONSIDERATIONS**13.1 Waste Treatment Methods**

Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	N.A.	N.A.	N.A.	N.A.
14.2 Shipping Name	N.A.	N.A.	N.A.	N.A.
14.3 Hazard Class	N.A.	N.A.	N.A.	N.A.
14.4 Packing Group	N.A.	N.A.	N.A.	N.A.
14.5 Environmental Hazards	N.A.	N.A.	N.A.	N.A.
14.6 Special Precautions	N.A.	N.A.	N.A.	N.A.

SECTION 15 - REGULATORY INFORMATION**15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture****United States****TSCA Regulatory Statement**

All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
SULFURIC ACID	No	No	Yes	Yes	Yes
AMMONIUM IRON II SULFATE HEXAHYDRATE	No	No	No	Yes	No

Europe**EEC Regulatory**

All intentional ingredients are listed on the European EINECS Inventory.

SECTION 16 - OTHER INFORMATION

Revisional Updates

4/26/2019 - Updated Section 1.4

5/29/2015 - Updated Sections 2.1 and 3.2

11/21/2013 - Updated Sections 2, 3 and 14

5/29/2013 - Released Version 1.0

NFPA Codes

Health 2 Flammability 0 Reactivity 2

Dangers

SULFURIC ACID

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

AMMONIUM IRON II SULFATE HEXAHYDRATE

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

MANUFACTURER DISCLAIMER: The information given herein is offered in good faith as accurate, but without guarantee. Conditions of the use and suitability of the product for particular uses are beyond our control. All risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.