

# Material Safety Data Sheet

## Iron / UIBC (Ferrene)

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Iron / UIBC (Ferrene).

**Catalog Numbers:** 1590-500 (R1, R2, R1A, R1B, Iron Standard),  
1580-225H, 1580-300 (R1, R2, Iron Standard)  
TL46311, 1595-200H (R2, R1A, R1B)  
TL46301 (R1, R2)

**Use:** This reagent is intended for in vitro quantitative determination of iron in human serum.

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#### Contact Point

Australia  
Quality Assurance Manager:  
Tel: +61 3 9790 4100  
Mon – Fri 9:00am to 5:00pm

U.S.A  
Chemtel  
24 Hour Emergency Assistance  
1-800-255-3924

### 2. HAZARD IDENTIFICATION

**UIBC Binding Reagent (R1B), Iron Standard, Iron Buffer (R1)**  
CLASSIFIED AS HAZARDOUS ACCORDING TO EU CRITERIA

**Hazard Classification:** HAZARDOUS SUBSTANCE, NON-DANGEROUS GOODS.

**Hazard Category:** Irritant

#### RISK PHRASES

R43 May cause sensitisation by skin contact.

#### SAFETY PHRASES

S24 Avoid contact with skin.  
S37 Wear suitable gloves.

**Poison Schedule:** None allocated [Aust].

**UIBC Buffer (R1A) and Iron Color Reagent (R2)**  
CLASSIFIED AS NON-HAZARDOUS ACCORDING TO EU CRITERIA

**Hazard Classification:** NON-HAZARDOUS SUBSTANCE, NON-DANGEROUS GOODS.

#### RISK PHRASES

None allocated

#### SAFETY PHRASES

S23 Do not breathe vapour.

**Poison Schedule:** None allocated [Aust].

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE NAME	Proportion	CAS Number
<b>Iron Buffer (R1)</b>		
HYDROXYLAMINE HYDROCHLORIDE	1 - 2 %	5470-11-1
WATER AND OTHER NON-HAZARDOUS SUBSTANCES	Balance	Mixture
<b>UIBC Binding Reagent (R1B)</b>		
HYDROXYLAMINE HYDROCHLORIDE	5 %	5470-11-1
WATER AND OTHER NON-HAZARDOUS SUBSTANCES	Balance	Mixture

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### Iron Standard

HYDROXYLAMINE HYDROCHLORIDE	5 %	5470-11-1
WATER AND OTHER NON-HAZARDOUS SUBSTANCES	Balance	Mixture

All other ingredients determined not to be hazardous according to the EU criteria.

### 4. FIRST AID MEASURES

**Swallowed:** If swallowed, **DO NOT** induce vomiting. If conscious, give 1 to 2 glasses of water to drink. Seek immediate medical assistance.

**Eye:** If product enters the eyes, immediately, flush with plenty of water for 15 minutes, ensuring eye lids are held open. If irritation persists transport to hospital or doctor.

**Skin:** If product contacts the skin, remove any contaminated clothing and wash skin thoroughly with soap and water. If irritation persists transport to hospital or doctor.

**Inhaled:** Move victim to fresh air. Apply resuscitation if victim is not breathing.

**First Aid Facilities:** Eye wash fountain, safety shower and normal wash room facilities.

**Advice to Doctor:** Treat symptomatically.

In case of poisoning, contact Poisons Information Centre

**In Australia call Tel: 131126**

**In New Zealand Tel: 034747000**

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Use extinguishing media suitable for surrounding fire situation.

**Hazards from Combustion Products:** Decomposes on heating emitting oxides of carbon, oxides of nitrogen and noxious smoke.

**Precautions for Fire Fighters and Special Protective Equipment:** If safe to do so, move undamaged containers from fire area. Fire fighters to wear Self-contained breathing apparatus (SCBA) in confined spaces, in oxygen deficient atmospheres or if exposed to products of decomposition. Full protective clothing is also recommended.

**Hazchem Code:** None allocated.

**Flammability:** This material is not a combustible or flammable liquid.

### 6. ACCIDENTAL RELEASE MEASURES

#### Emergency Procedures

Keep unnecessary people away. Isolate hazard area and deny entry. If product spills onto floors it will represent a slip hazard, walk cautiously. Wear protective equipment to prevent skin and eye contact, as outlined under personal protection in this MSDS.

#### Methods and Materials for Containment and Cleanup Procedures

Dike area using with an absorbent such as diatomaceous earth - to prevent run off into drains and waterways. Throw further absorbent (diatomaceous earth or other inert material) on top of spill, then shovel up and seal in properly labeled containers for disposal.

### 7. HANDLING AND STORAGE

#### Precautions for Safe Handling

Avoid contact with skin and generating vapours. Provide adequate ventilation.

#### Conditions for Safe Storage

Store in a cool place and out of direct sunlight. Store away from sources of heat or ignition. Store away from strong alkalis and oxidizing agents. Keep containers closed, when not using the product. When stored at 2 - 8°C the reagent will be stable until the expiry date on the bottle and kit box labels. Store in original packaging as approved by manufacturer.

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### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Exposure Standards

No exposure standards have been assigned by [NOHSC] for this product or any of the components.

#### Engineering Controls

Maintain adequate ventilation at all times. In most circumstances natural ventilation systems are adequate.

#### Personal Protection Equipment

**Gloves:** The use of nitrile or neoprene gloves are recommended.

**Eyes:** Chemical glasses or face shield to protect eyes.

**Respiratory Protection:** Avoid breathing of vapours. Select and use respirators in accordance with AS/NZS 1715/1716. The use of a dust mask (disposable) or a half-face respirator fitted with a P1 filter is recommended. Filter capacity and respirator type depends on exposure levels and type of contaminant. If entering spaces where the airborne concentration of a contaminant is unknown then the use of a Self-contained breathing apparatus (SCBA) with positive pressure air supply complying with AS/NZS 1715 / 1716, or any other acceptable International Standard is recommended. Select and use respirators in accordance with AS/NZS 1715/1716.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

	<b>UIBC Buffer (R1A)</b>	<b>UIBC Binding Rgt (R1B)</b>	<b>Iron Color Rgt (R2)</b>
<b>Appearance:</b>	Clear, colourless liquid	Clear, colourless liquid	Clear, yellow liquid
<b>Boiling Point:</b>	Not available	Not available	Not available
<b>Freezing Point:</b>	Not available	Not available	Not available
<b>Vapour Pressure:</b>	Not available	Not available	Not available
<b>Specific Gravity:</b>	Not available	Not available	Not available
<b>Flash Point:</b>	Not applicable	Not applicable	Not applicable
<b>Flammability Limits:</b>	Not applicable	Not applicable	Not applicable
<b>Solubility in Water:</b>	Completely miscible	Completely miscible	Completely miscible

#### Other Properties

<b>pH:</b>	8.4 ± 0.1 @ 19-22°C	Not applicable	4.5 ± 0.1 @ 19-22°C
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	<b>Iron buffer reagent (R1)</b>	<b>Iron Standard</b>
<b>Appearance:</b>	Clear, colourless liquid	Clear, colourless liquid
<b>Boiling Point:</b>	Not available	Not available
<b>Freezing Point:</b>	Not available	Not available
<b>Vapour Pressure:</b>	Not available	Not available
<b>Specific Gravity:</b>	Not available	Not available
<b>Flash Point:</b>	Not applicable	Not applicable
<b>Flammability Limits:</b>	Not applicable	Not applicable
<b>Solubility in Water:</b>	Completely miscible	Completely miscible

#### Other Properties

<b>pH:</b>	4.5 ± 0.1 @ 19-22°C	Not applicable
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### 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable under normal conditions of use.

**Conditions to Avoid:** High temperatures and incompatibles.

**Incompatible Materials:** Strong alkalis and oxidizing agents.

**Hazardous Decomposition Products:** Decomposes on heating emitting oxides of carbon, oxides of nitrogen and noxious smoke.

**Hazardous Reactions:** Will not occur.

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### 11. TOXICOLOGICAL INFORMATION

#### **UIBC Binding Reagent (R1B), Iron Buffer (R1), Iron Standard**

There is no toxicological information available for this product, however, for the component:

#### **Hydroxylamine Hydrochloride**

Oral LD50(rat): 141 mg/kg

There is some evidence based upon genetic testing of hydroxylamine hydrochloride that it causes genetic damage to Bacteria - B Subtilis & E Coli with apparent mutations to other micro-organisms, including, Yeast - S Pombe and E Coli. Lymphocyte damage has been observed in mice at concentrations of 220 mg/L (+S9).

#### **UIBC Buffer (R1A) and Iron Color Reagent (R2)**

There is no toxicological information available for this product, it is anticipated that the following information is applicable:

Oral LD50(rat): > 2,000 mg/kg

Dermal LD50(rabbit): > 2,000 mg/kg

#### **Acute Health Effects**

#### **UIBC Binding Reagent (R1B), Iron Buffer (R1), Iron Standard**

**Swallowed:** May cause irritation to mouth, throat and stomach with effects including pains in the stomach, which may lead to nausea, vomiting and diarrhoea.

**Eye:** May cause irritation to the eyes, with effects including: tearing, pain, stinging and blurred vision.

**Skin:** Will cause irritation to the skin, with effects including; Redness, itchiness, and swelling.

**Inhaled:** Vapours from the product may cause irritation to the nose, throat and respiratory system with effects including: cough, discomfort, difficulty breathing and shortness of breath.

**Chronic:** Prolonged or repeated contact with this substance will cause sensitisation by skin contact.

#### **UIBC Buffer (R1A) and Iron Color Reagent (R2)**

**Swallowed:** Drinking large quantities of this product, may cause irritation to mouth, throat and stomach, which may lead to nausea, vomiting and diarrhoea.

**Eye:** May cause mild irritation to the eyes, with effects including: tearing and blurred vision. These effects are anticipated to be of a transient (short acting) nature and no long term injury is envisaged.

**Skin:** May cause mild irritation to the skin.

**Inhaled:** If the product is heated, the vapours generated from this product may cause irritation to the mouth, throat and upper respiratory system.

**Chronic:** Prolonged or repeated skin exposure may cause skin irritation in some susceptible individuals.

### 12. ECOLOGICAL INFORMATION

#### **UIBC Binding Reagent (R1B), Iron Buffer (R1), Iron Standard**

There is no ecological information available for this product, however, hydroxylamine hydrochloride is considered to be very toxic to aquatic organisms. If large quantities enter drains, sewers or waterways, immediately contact the Environmental Protection Agency.

#### **UIBC Buffer (R1A) and Iron Color Reagent (R2)**

Under present EU legislation above products do not meet the criteria of being considered an environmental hazard. Large quantities however, should not be discharged to waterways, drains or sewers.

### 13. DISPOSAL CONSIDERATIONS

Refer to appropriate authority in your State. Normally suitable for disposal by approved waste disposal agent.

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### 14. TRANSPORT INFORMATION

**UN Number:** None allocated.

**Proper Shipping Name:** NONE ALLOCATED.

**Dangerous Goods Class:** None allocated.

**Subsidiary risk:** None allocated.

**Packing Group:** None allocated.

**Hazchem Code:** None allocated.

**Road and Rail Transport:** Not classified as a Dangerous Good according to the United Nations Recommendations for the Transport of Dangerous Goods and Globally Harmonized System for the Classification and Labeling of Chemicals.

**Air Transport:** Not classified as a Dangerous Good according to the International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

**Marine Transport:** Not classified as a Dangerous Good according to the International Maritime Organization Rules (Maritime Dangerous Goods Code - IMDG Code) for transport by sea.

### 15. REGULATORY INFORMATION

**Poison Schedule:** None allocated [Aust].

**Inventory Status:**

Australia (AICS)	Y
United States (TSCA)	Y
Canada (DSL)	Y
Europe (EINECS/ELINCS)	Y

Y = all ingredients are on the inventory.

### 16. OTHER INFORMATION

Issue date: June, 2005.

**Reasons for Update**

1. Alignment with the 2<sup>nd</sup> Edition of National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC:2001(2003).
2. Changes and /or addition made to all sections.

**Key Legend Information**

NOHSC - National Occupational Health & Safety Commission [Aust]

SUSDP - Standard for the Uniform Scheduling of Drugs and Poisons {Poison Schedule} [Aust]

TWA - Time Weighted Average [Int]

STEL - Short Term Exposure Limit [Int]

AICS - Australian Inventory of Chemical Substances [Aust]

EPA - Environmental Protection Agency [Int]

NIOSH - National Institute for Occupational Safety and Health [US]

AS/NZS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. [Aust]

AS/NZS 1716 - Respiratory Protective Devices. [Aust]

Hazchem Code - Fire Fighter Designation [Aust]

IATA - International Aviation Transport Authority [Int]

ICAO - International Civil Aviation Organization [Int]

IMO - International Maritime Organisation. [Int]

IMDG - International Maritime Dangerous Goods [Int]

United Nations Recommendations for the Transport of Dangerous Goods and Globally Harmonized System for the Classification and Labeling of Chemicals. [Int]

EU - European Union

TSCA - Toxic Substances Control Act [US]

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### 16. OTHER INFORMATION

DSL - Domestic Chemical List [Can]

EINECS - European Inventory of Existing Commercial Chemical Substances [Int]

ELINCS - Existing List of Notified Chemical Substances. [Int]

[Aust] = Australia

[Int] = International

[US] = United States of America

[Can] = Canada

#### **Principal References**

Information supplied by manufacturer, reference sources including the public domain.

#### **Disclaimer**

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

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**END OF MSDS**