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)
1595-200H (R2, R1A, R1B)
Use: This reagent is intended for in vitro quantitative determination of iron in human serum.

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NOBLE PARK VIC 3174
AUSTRALIA
Tel: +61 3 9790 4100
Fax: +61 3 9790 4155
E-mail: info.clinicalchemistry@thermo.com

THERMO ELECTRON
331 South 104th Street
LOUISVILLE, CO 80027
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Tel: (303) 581 6428
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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

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE NAME	Proportion	CAS Number
Iron Buffer (R1)		
HYDROXYLAMINE HYDROCHLORIDE	1 - 2 %	5470-11-1
WATER AND OTHER NON-HAZARDOUS SUBSTANCES	Balance	Mixture

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

3. COMPOSITION / INFORMATION ON INGREDIENTS (continued)

UIBC Binding Reagent (R1B)

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.

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.

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

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

4. FIRST AID MEASURES

Swallowed:
If swallowed, **DO NOT** induce vomiting. If conscious, give1 to 2 glasses of water to drink. Seek immediate medical assistance.

Eye:
If material is splashed into 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 material is splashed onto 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

Fire/Explosion Hazard
If safe to do so, move undamaged containers from fire area.
Hazardous Decomposition Products: Decomposes on heating emitting oxides of carbon, oxides of nitrogen and noxious smoke.

Fire Fighting Procedures: 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.
Extinguishing Media: Use extinguishing media suitable for surrounding fire situation.

Flammability
This material is not a flammable or combustible liquid.

6. ACCIDENTAL RELEASE MEASURES

Caution! Material may be slippery when spilt. Walk cautiously. Ventilate area. Wear protective equipment to prevent skin and eye contact, as outlined under personal protection in this MSDS. Bund area using vermiculite - to prevent run off into drains and waterways. Throw additional absorbent (vermiculite or other inert material) and place on top of spill, then shovel up and seal in properly labeled containers for disposal.

7. HANDLING AND STORAGE

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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Standards

No exposure standards have been assigned by the National Occupational Health & Safety Commission (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: If the skin is likely to be exposed to this product, then the use of nitrile or neoprene gloves are recommended.
EYES: Chemical goggles or safety spectacles with side shields to protect eyes.
RESPIRATORY PROTECTION: Avoid breathing of mists. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

	UIBC Buffer (R1A)	**UIBC Binding Rgt (R1B))**	**Iron Color Rgt (R2)**
Appearance:	Clear, colourless liquid.	Clear, colourless liquid.	Clear, yellow liquid.
Boiling Point:	Not available.	Not available.	Not available.
Freezing Point:	Not available.	Not available.	Not available.
Vapour Pressure:	Not available.	Not available.	Not available.
Specific Gravity:	Not available.	Not available.	Not available.
Flash Point:	Not applicable.	Not applicable.	Not applicable.
Flammability Limits:	Not applicable.	Not applicable.	Not applicable.
Solubility in Water:	Completely miscible.	Completely miscible.	Completely miscible.
Other Properties			
pH:	8.4 ± 0.1 @ 19-22^{o}C	Not applicable.	4.5 ± 0.1 @ 19-22^{o}C

	Iron buffer reagent (R1)	**Iron Standard**	
Appearance:	Clear, colourless liquid.	Clear, colourless liquid.	.
Boiling Point:	Not available.	Not available.	.
Freezing Point:	Not available.	Not available.	
Vapour Pressure:	Not available.	Not available.	
Specific Gravity:	Not available.	Not available.	
Flash Point:	Not applicable.	Not applicable.	
Flammability Limits:	Not applicable.	Not applicable.	
Solubility in Water:	Completely miscible.	Completely miscible.	.
Other Properties			
pH:	4.5 ± 0.1 @ 19-22^{o}C	Not applicable.	

10. STABILITY AND REACTIVITY

STABILITY:
Stable under normal conditions of use.

HAZARDOUS DECOMPOSITION PRODUCTS:
Decomposes on heating emitting oxides of carbon, oxides of nitrogen and noxious smoke.

INCOMPATIBILITIES:
Strong alkalis and oxidizing agents.

CONDITIONS TO AVOID:
High temperatures and incompatibles.

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:
Mists 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.

11. TOXICOLOGICAL INFORMATION (continued)

Skin:
May cause mild irritation to the skin.

Inhaled:
If the product is heated, the mists 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, hydroxyamine 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 met 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.

14. TRANSPORT INFORMATION

UN Number: None allocated
Proper Shipping Name: NONE ALLOCATED
Dangerous Goods Class: None allocated
Packing Group: None allocated
Poison Schedule: 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 labelling 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

Inventory Status:

Australia (AICS)	Y
United States (TSCA)	Y
Canada (DSL)	Y
Europe (EINECS/ELINCS)	Y
Japan (MITI)	Y
South Korea (KECL)	Y

Y = all ingredients are on the inventory.

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16. OTHER INFORMATION

Issue date: August, 2004

Reasons for Update:

1. Alignment with the 2nd 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]
TWA - Time Weighted Average [Int]
STEL - Short Term Exposure Limit [Int]
AICS - Australian Inventory of Chemical Substances
EPA - Environmental Protection Agency [Int]
NIOSH - National Institute for Occupational Safety and Health [US]
AS/NZS 1715 - Selection, use and maintenance of respiratory protectice devices. [Aust]
AS/NZS 1716 - Respiratory protective devices. [Aust]
IATA - International Aviation Transport Authority [Int]
ICAO - International Civil Aviation Organization
IM IMDG - International Maritime Dangerous Goods

United Nations Recommendations for the Transport of Dangerous Goods and Globally Harmonized System for the classification and labelling of Chemicals. [Int]
EU - European Union
[Aust/NZ] = Australian/New Zealand
[Int] = International
[US] = United States of America

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.
Our responsibility for products sold is subject to our standard terms and conditions which are available on request.

END OF MSDS