

Material Safety Data Sheet

Direct Bilirubin

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Direct Bilirubin

Catalog Numbers: 7200-009

Use: This reagent is intended for in vitro quantitative determination of total and/or direct bilirubin in serum on Olympus Demand[®] and Reply[®].

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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

CLASSIFIED AS HAZARDOUS ACCORDING TO EU CRITERIA

Hazard Classification: HAZARDOUS SUBSTANCE, DANGEROUS GOODS.

Hazard Category: Irritant

RISK PHRASES

Reagent A & B

R38 Irritating to skin

R41 Risk of serious damage to eyes.

SAFETY PHRASES

Reagent A

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S28 After contact with skin, wash immediately with plenty of soap and water

Reagent B

S24/25 Avoid contact with skin and eyes.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Poison Schedule: None allocated

3. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE NAME	Proportion	CAS Number
Reagent A		
BENZENEDIAZONIUM, 2,4-DICHLORO-1,5-NAPHTHALENE		
DISULFONATE	1 to 5 %	Mixture
Reagent B		
HYDROCHLORIC ACID	1 to 2 %	7647-01-0
WATER AND OTHER NON HAZARDOUS INGREDIENTS	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 victim is conscious give 1 to 2 glasses of water to drink. Immediately transport to hospital or doctor.

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4. FIRST AID MEASURES (continued)

Eye:

If material is splashed into eyes, immediately, flush with plenty of water for 15 minutes, ensuring eye lids are held open. Immediately 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 hydrogen chlorides, oxides of sulfur and nitrogen.

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**Reagent A**

This material is not a combustible or flammable solid. However, under certain conditions and if sufficiently distributed in air and a suitable source of ignition is present, then a dust explosion may occur.

Reagent B

This material is not a flammable or combustible liquid.

6. ACCIDENTAL RELEASE MEASURES

Reagent A

Avoid generating dusts. Wear suitable protective equipment. Ventilate area. If possible wet area down to prevent high dust levels. If available, use dustless methods, such as a HEPA vacuum and filter. Otherwise, use a non-sparking shovel and place into a suitably labeled container for later disposal. Do not dry sweep.

Reagent B

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. Place absorbent (vermiculite or other inert material) onto spill. Collect and seal in properly labeled containers for disposal. Remainder of material on floor can be neutralized by *cautiously* adding sodium bicarbonate or soda ash. Collect this material after foaming/effervescence ceases and place into above labeled container.

7. HANDLING AND STORAGE

Reagent A

Avoid generating dusts. Store in a cool place and out of direct sunlight. 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.

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7. HANDLING AND STORAGE (continued)

Reagent B

Store in a cool place and out of direct sunlight. 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

Reagent A

No exposure standards are available for this product, however, the nature of the product is a dust therefore it is recommended that an exposure standard of 10 mg/m³ for an eight hour exposure based upon Nuisance dust be implemented.

Reagent B

No exposure standards are available for this product, however, the following exposure standards have been assigned by the National Occupational Health & Safety Commission (NOHSC) to the following component of the product:

HYDROCHLORIC ACID

(Worksafe Australia)

[TWA] 5 ppm 7.5 mg/m³

[STEL] Peak limitation

Notices: H

Peak Limitation: For some rapidly acting substances and irritants, the averaging of the airborne concentration over an eight hour period is inappropriate. These substances may induce acute effects after relatively brief exposure to high concentrations and so the exposure standard for these substances represents a maximum or "peak concentration" to which workers may be exposed.

Engineering Controls

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

Personal Protection Equipment

GLOVES: Not normally required, however, if product has spilt, or package is broken, then the use of nitrile gloves is recommended.

EYES: Chemical goggles or glasses to protect eyes.

RESPIRATORY PROTECTION: Avoid breathing of vapours. The use of a respirator is not normally required, however, 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

	Reagent A	Reagent B
Appearance:	White powder with no odour.	Clear liquid with faint odour.
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: 1.55 1.55

10. STABILITY AND REACTIVITY

STABILITY:

Stable under normal conditions of use.

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10. STABILITY AND REACTIVITY (continued)

HAZARDOUS DECOMPOSITION PRODUCTS:

Decomposes on heating emitting hydrogen chlorides, oxides of sulfur and nitrogen.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:**Reagent A**

Strong oxidizing agents.

Reagent B

Strong oxidizing agents and strong alkalis.

CONDITIONS TO AVOID:**Reagent A**

Generation of high dust levels and incompatibles.

Reagent B

Incompatibles.

11. TOXICOLOGICAL INFORMATION

There is no toxicological information available for this product.

Reagent A

Since the pH of the product is less than 2, and that the active ingredient is a long chain preservative, demonstrating similar properties to quaternary ammonium compounds, based upon this, Thermo Electron believes that this product will cause severe irritation to eyes and irritation to the skin.

Reagent B

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

Hydrochloric acid:

According to OECD Guideline for the Testing of Chemicals (OECD 405) for eye corrosion and

OECD Guideline for the Testing of Chemicals (OECD 404) for skin corrosion, both test procedures have been utilized to determine that hydrochloric acid is a confirmed corrosive substance.

This product contains less than the amount of hydrochloric acid which is considered a hazardous substance according to Worksafe Australia, however, we anticipated that this product will cause severe eye irritation and significant skin irritation especially if the duration of exposure is prolonged or repeated.

ACUTE HEALTH EFFECTS**Swallowed:**

May cause irritation to mouth, throat and stomach. Swallowing of large quantities may result in nausea, vomiting and diarrhoea.

Eye:

Will cause severe irritation to the eyes, with effects including: tearing, pain, stinging and blurred vision. If the product is not removed promptly corneal injury may occur.

Skin:

Will cause irritation to the skin, with effects including; Redness and itchiness. The product is not anticipated to be absorbed through the skin.

Inhaled:

May cause irritation to the nose, throat and respiratory system. However, this is only anticipated to occur if the product is heated.

Chronic:

Prolonged or repeated skin contact may lead to possible dermatitis in some susceptible individuals.

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12. ECOLOGICAL INFORMATION

No information is available for this product, however, for hydrochloric acid component:

Water pollution:

Persistence: pH will be neutralized slowly by natural alkalinity and carbon dioxide.

Effect on water treatment process: May prevent coagulation by some agents through pH reduction.

Water uses threatened: All uses.

Industrial fouling potential: Highly corrosive to equipment. pH is often a very important parameter in industrial water use.

Avoid contaminating drains, sewers or waterways.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

Reagent A and B

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 transport

Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) 6th Edition. Not classified as a Dangerous Good according to the UN, DOT(US), ICAO(IATA) or IMO(IMDG).

Marine Transport:

Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) 6th Edition. Not classified as a Dangerous Good according to the UN, DOT(US), ICAO(IATA) or IMO(IMDG).

Air Transport:

Reagent B

UN No: UN1760

PROPER SHIPPING NAME: CORROSIVE LIQUID, N.O.S.(HYDROCHLORIC ACID)

CLASS: 8

PACK GROUP: III

LABELS: CORROSIVE

15. REGULATORY INFORMATION

Poison Schedule: None allocated

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: July, 2004

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 protective devices. [Aust/NZ]

AS/NZS 1716 - Respiratory protective devices. [Aust/NZ]

SAA/SNZ HB76:1997 Dangerous Goods - Initial Emergency Response Guide (IERG) [Aust/NZ]

IATA - International Aviation Transport Authority [Int]

ICAO - International Civil Aviation Organization

IMO - International Maritime Organisation. [Int]

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. {Road Transport} [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.

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END OF MSDS