

Material Safety Data Sheet

Direct Bilirubin

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Direct Bilirubin

Catalog Numbers: TR33321, TR33326, TR33398, 1225-250, 1225-200H

Use: This reagent is intended for in vitro quantitative determination of direct bilirubin in human serum .

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189 - 199 Browns Rd
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

CLASSIFIED AS HAZARDOUS ACCORDING TO EU CRITERIA

Hazard Classification: HAZARDOUS SUBSTANCE, DANGEROUS GOODS.

Hazard Category:

Direct Bilirubin: Irritant

Nitrite: Harmful

RISK PHRASES

Direct Bilirubin

R38 Irritating to skin

R41 Risk of serious damage to eyes.

Nitrite

R22 Harmful if swallowed.

SAFETY PHRASES

Direct Bilirubin

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

Nitrite

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

Poison Schedule: None allocated.

3. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE NAME	Proportion	CAS Number
Direct Bilirubin		
HYDROCHLORIC ACID	~ 1 %	7647-01-0
WATER AND OTHER NON HAZARDOUS INGREDIENTS	Balance	Mixture

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

Material Safety Data Sheet

Direct Bilirubin

3. COMPOSITION / INFORMATION ON INGREDIENTS (continued)

Nitrite

SODIUM NITRITE	1 to 10 %	7632-00-0
WATER AND OTHER NON-HAZARDOUS SUBSTANCES	> 60 %	Mixture

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

4. FIRST AID MEASURES

Swallowed:**Direct Bilirubin**

If swallowed, **DO NOT induce vomiting**. If victim is conscious give glass of water to drink. Immediately transport to hospital or doctor.

Nitrite:

If swallowed, and if more than 15 minutes from a hospital, **induce vomiting**, preferably using Ipecac Syrup APF.

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

This material is not a flammable or combustible liquid.

6. ACCIDENTAL RELEASE MEASURES

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 sand or soil - to prevent run off into drains and waterways. Place absorbent (soil, sand, 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.

Material Safety Data Sheet

Direct Bilirubin

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 2-25°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

Direct Bilirubin

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

Nitrite

The National Occupational Health & Safety Commission (NOHSC) has not assigned any exposure standards for this product or for any of the components

Engineering Controls

Maintain adequate ventilation at all times. In most circumstances natural ventilation systems are adequate unless the material is heated, reacted or otherwise changed in some type of chemical reaction, then the use of a local exhaust ventilation system is recommended.

Personal Protection Equipment

GLOVES: Not normally required, however, if product has spilt, or package is broken, then the use of PVC or neoprene 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

	Direct Bilirubin	Sodium Nitrite
Appearance:	Clear liquid with faint 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:	1.15 ± 0.1	7.0 ± 0.4 @19°–22° C
% VOLATILES:	> 80 %	Not available.

10. STABILITY AND REACTIVITY

STABILITY:

Stable under normal conditions of use.

HAZARDOUS DECOMPOSITION PRODUCTS:

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

Material Safety Data Sheet

Direct Bilirubin

10. STABILITY AND REACTIVITY (continued)

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

Strong oxidizing agents and strong alkalis.

CONDITIONS TO AVOID:

Incompatibles.

11. TOXICOLOGICAL INFORMATION

Direct Bilirubin

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.

Nitrite

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

The two basic actions of sodium nitrite in vivo are relaxation of smooth muscle, especially of small blood vessels, and in toxic doses the conversion of hemaoglobin to methemoglobin.

Oral LD50(rat): 180 mg/kg

There is no clear evidence that sodium nitrite will cause carcinogenesis, mutagenesis or impair fertility or cause developmental toxicity effects.

ACUTE HEALTH EFFECTS**Swallowed:**

May cause irritation to mouth, throat and stomach with effects including mucous build up, irritation to the tongue and lips and pains in the 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 drying / defatting and possible dermatitis in some susceptible individuals.

Material Safety Data Sheet

Direct Bilirubin

12. ECOLOGICAL INFORMATION

Direct Bilirubin

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.

Nitrite

According to Worksafe Australia and the European Union sodium nitrite is considered to be very toxic to aquatic organisms.

WATER POLLUTION

Aquatic toxicity: 17.1 ppm/24 hr/minnow/no effect

fresh water 7.5 ppm/48 hr

Waterfowl toxicity: Data not available

Biological oxygen demand (BOD): Data not available

Food chain concentration potential: Data not available.

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

Direct Bilirubin & Nitrite

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 labelling of Chemicals.

Air Transport:

Total Bilirubin

This product is classified as a Dangerous Good according to ICAO/IATA regulations:

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

UN No: UN1760

CLASS: 8

PACK GROUP: III

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.

Material Safety Data Sheet

Direct Bilirubin

15. REGULATORY INFORMATION

Poison Schedule: None allocated

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.

16. OTHER INFORMATION

Issue date: July, 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 protective devices. [Aust]

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

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. [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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