

Material Safety Data Sheet

Total Bilirubin Reagent

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Total Bilirubin Reagent.

Catalog Numbers: TD32301, TH32301, TL32301, TR32321, TR32326, TR32398, TY32301, BU3231-BP, UV3231xxxx-BP, VC3231xxxx, VT3231xxxx.

Use: This reagent is intended for in vitro quantitative estimation of total bilirubin in human serum or plasma.

THERMO ELECTRON
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

Contact Point

Australia

Quality Assurance Manager:

Tel: +61 3 9790 4100

Mon – Fri 9:00am to 5:00pm

THERMO ELECTRON

171 Industry Drive

Pittsburgh, PA, 15275

U.S.A

Tel: (800) 558 9115

Fax: (412) 788 6833

E-mail: info.clinicalchemistry@thermo.com

U.S.A

Chemtel

24 Hour Emergency Assistance

1-800-255-3924

813-248-0585

2. HAZARD IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO EU CRITERIA

Hazard Classification: HAZARDOUS SUBSTANCE, DANGEROUS GOODS.

Hazard Category

Total Bilirubin: Irritant

Nitrite: Harmful

RISK PHRASES

Total Bilirubin

R38 Irritating to skin

R41 Risk of serious damage to eyes.

Nitrite

R22 Harmful if swallowed.

SAFETY PHRASES

Total 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

Total Bilirubin: S5

This material is a Schedule (S5) Poison and must be stored, handled and used according to the appropriate regulations.

Nitrite: S6

This material is a Schedule (S6) Poison and must be stored, handled and used according to the appropriate regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE NAME	Proportion	CAS Number
Total Bilirubin		
HYDROCHLORIC ACID	1 - 2 %	7647-01-0
HEXADECYL TRIMETHYL AMMONIUM BROMIDE	1 - 2 %	57-09-0
WATER AND OTHER NON HAZARDOUS INGREDIENTS	Balance	Mixture

Material Safety Data Sheet

Total Bilirubin Reagent

3. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE NAME	Proportion	CAS Number
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:

Total 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 product enters eyes, immediately, flush with plenty of water for 15 minutes, ensuring eye lids are held open. Immediately 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 hydrogen chlorides, oxides of nitrogen.

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. 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

Total Bilirubin Reagent

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid contact with skin and eyes.

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 oxidizing agents and strong alkalis. 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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Standards

Total Bilirubin

No exposure standards have been assigned by [NOHSC] for this product however, the following exposure standards have been assigned to the following component of the product.

HYDROCHLORIC ACID

(Worksafe Australia)

[TWA] 5 ppm 7.5 mg/m³

[STEL] Peak limitation

Notices: H

Nitrite

No exposure standards have been assigned by (NOHSC) 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 glasses or face shield 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

	Total 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:	1.05 ± 0.1	7.0 ± 0.4 @ 19-22° C
% Volatiles:	> 80 %	Not available.

Material Safety Data Sheet

Total Bilirubin Reagent

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of use.

Conditions to Avoid: Incompatibles.

Incompatible Materials: Strong oxidizing agents and strong alkalis.

Hazardous Decomposition Products: Decomposes on heating emitting hydrogen chlorides, oxides of nitrogen.

Hazardous Reactions: Will not occur.

11. TOXICOLOGICAL INFORMATION

Total 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.

12. ECOLOGICAL INFORMATION

Total 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.

Material Safety Data Sheet

Total Bilirubin Reagent

12. ECOLOGICAL INFORMATION

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

Total Bilirubin & Nitrite

UN Number: None allocated

Proper Shipping Name: NONE ALLOCATED

Dangerous Goods Class: None allocated

Subsidiary risk: None allocated

Packing Group: None allocated

Label: Total Bilirubin: Irritant (Xi), **Nitrite:** Harmful (Xn)

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

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 Number: 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.

15. REGULATORY INFORMATION

Poison Schedule

Total Bilirubin: S5

This material is a Schedule (S5) Poison and must be stored, handled and used according to the appropriate regulations.

Nitrite: S6

This material is a Schedule (S6) Poison and must be stored, handled and used according to the appropriate regulations.

Inventory Status:

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

Y = all ingredients are on the inventory.

Material Safety Data Sheet

Total Bilirubin Reagent

16. OTHER INFORMATION

Issue date: January, 2006

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]

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.

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

© 2003 - 2006 Thermo Electron Corporation. All rights reserved.

License granted to make unlimited paper copies for internal use only.

END OF MSDS