

# Material Safety Data Sheet

## Creatinine

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Creatinine

**Manufacturer's Product Code:** 7200-015

**Use:** For in vitro diagnostic use and for the quantitative determination of Creatinine in serum on Olympus Demand<sup>®</sup> and Reply<sup>®</sup>.

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Tel: (303) 581 6428  
Fax: (303) 581 6429  
E-mail: [info.clinicalchemistry@thermo.com](mailto:info.clinicalchemistry@thermo.com)

#### 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:

**Reagent(B):** Corrosive

**Reagent (A):** Irritant

#### RISK PHRASES

##### **Reagent(B)**

R35 Causes severe burns.

R41 Risk of serious damage to eyes.

##### **Reagent (A)**

R38 Irritating to skin

R41 Risk of serious damage to eyes.

#### SAFETY PHRASES

##### **Reagent(B)**

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 (A)**

S24/25 Avoid contact with skin and eyes.

#### Poison Schedule:

**Reagent(B):** S6

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

##### **Reagent (A)**

**Poison Schedule:** None allocated

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### Reagent (B)

**SUBSTANCE NAME**  
SODIUM HYDROXIDE

**Proportion**  
1 to 10 %

**CAS Number**  
1310-73-2

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

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS (continued)

#### Reagent (A)

SUBSTANCE NAME	Proportion	CAS Number
PICRIC ACID	~ 1 %	88-89-1
NON-IONIC SURFACTANT	~ 2 %	Proprietary
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 conscious, give 1 to 2 glasses of water to drink. Seek urgent medical assistance.

#### Eye:

If material is splashed into eyes, flush with plenty of water for at least 15 minutes, ensuring eye lids are held open.

**URGENTLY** transport to hospital or doctor.

#### Skin:

If material is splashed onto the skin, remove any contaminated clothing and wash skin thoroughly with water and soap. Immediately transport to hospital or doctor.

#### Inhaled:

Remove victim to fresh air. Do not use mouth-to-mouth method if victim inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.

#### First Aid Facilities:

Eye wash fountain, safety shower and normal wash room facilities.

#### Advice to Doctor:

Treat symptomatically as for alkali burns.

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

**EXTINGUISHING MEDIA:** Use dry chemical, carbon dioxide, foam or water fog.

**SPECIAL FIRE FIGHTING PROCEDURES:** Self-contained breathing apparatus (SCBA) required for fire-fighting personnel. If possible to do so safely, shut off fuel to fire. Use water spray to spray to cool fire-exposed surfaces and to protect personnel.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** If tanks, drums or containers of this material are heated, they may rupture and project corrosive liquids over a wide area.

#### Flammability

Not flammable or combustible. If involved in a fire may generate noxious and corrosive fumes. However, if the product is spilt onto non-ferrous metals such as aluminium, zinc, magnesium or their alloys, then flammable and potentially explosive hydrogen gas will be generated.

### 6. ACCIDENTAL RELEASE MEASURES

#### Reagent (B)

#### EMERGENCY ACTION:

Keep unnecessary people away; Isolate hazard area and deny entry. Stay upwind; Keep out of low areas. Wear appropriate eye, skin and respiratory protection as outlined in this MSDS. **Caution, this material is corrosive and if spilt on floors will be slippery.**

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### 6. ACCIDENTAL RELEASE MEASURES (continued)

#### **SPILL OR LEAK PROCEDURE:**

Remove all non-ferrous metals from area (aluminium, zinc and magnesium), if product has spilt on these metals immediately, flush them with plenty of water and shut off ignition sources, no smoking or flames in hazard area. Stop leak if you can do it without risk. Water spray may reduce vapour; but it may not prevent ignition in closed spaces.

#### **SMALL SPILLS:**

Throw vermiculite onto spill. **DO NOT** use sawdust. Shovel up, using non-sparking tools. Place into labeled plastic drum(s) for later disposal.

#### **LARGE SPILLS:**

Notify Emergency Services (Police or Fire Brigade). REMAIN CALM. Tell them exact location, nature, hazards, quantities, type of vehicle and any other information that would be helpful. Contain spill. Remove all ignition sources and safely stop flow of spill. Bund area. Trained personnel should wear Personal Protective equipment as highlighted in this MSDS. Blanket the spill with foam or use water fog to disperse vapour clouds. Consult an expert regarding disposal of this product.

**Warning: Products that contain alkali hydroxides must be kept away from non-ferrous metals, as extremely flammable hydrogen gas will be generated and if the appropriate flammability limits are reached and a source of ignition is present, a violent explosion will occur.**

#### **Reagent (A)**

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.

### 7. HANDLING AND STORAGE

Store in a cool place and out of direct sunlight. Store away from sources of heat or ignition, strong acids, aluminium, zinc and magnesium or their alloys. Store at 2-8°C and the reagent will be stable until the expiry date stated on the bottle and kit box labels. Avoid prolonged freezing of this product.

**Additional Information:** Mixing this product with strong mineral acids such as sulfuric, nitric and/or hydrochloric acid will result in a highly exothermic (heat releasing ) reaction, which may lead to a fire and potential explosion.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### **Kit and Reagent (B)**

#### **Exposure Standards**

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:

#### ***SODIUM HYDROXIDE***

(Worksafe Australia)

[TWA]2 mg/m<sup>3</sup>

[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**

Corrosive liquid. Single significant exposure may cause severe injury or even death. Maintain adequate ventilation at all times.

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### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (cont)

#### Personal Protection Equipment

**GLOVES:** Neoprene gauntlet.

**EYES:** Chemical goggles or faceshield to protect eyes.

**RESPIRATORY PROTECTION:** Avoid breathing of vapours. Select and use respirators in accordance with AS/NZS 1715/1716. When the concentration of airborne contaminants reach the exposure standards then the use of a half-face respirator fitted with a combined dust/mist filter is recommended. For high concentration use an atmosphere-supplied, positive pressure demand self-contained or airline breathing apparatus supplied air respirator complying with the requirements of AS/NZS 1715 is recommended. Filter capacity and respirator type depends on exposure levels and type of contaminant.

#### Reagent (A)

#### Exposure Standards

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:

#### PICRIC ACID

(Worksafe Australia)

[TWA] 0.1 mg/m<sup>3</sup>

**Notices:** H

#### 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 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

	Reagent (A)	Reagent (B)
<b>Appearance:</b>	Clear, yellow liquid with mild odour.	Colourless liquid with no odour.
<b>Boiling 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 soluble.	Completely soluble.
<b>Other Properties</b>		
<b>pH:</b>	Not available.	13.9 (concentrate)

### 10. STABILITY AND REACTIVITY

#### STABILITY:

Stable under normal conditions of use.

#### HAZARDOUS DECOMPOSITION PRODUCTS:

Emits choking and corrosive fumes when heated to decomposition.

#### HAZARDOUS POLYMERIZATION:

Will not occur.

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### 10. STABILITY AND REACTIVITY (continued)

#### **INCOMPATIBILITIES:**

Strong mineral acids, aluminium, magnesium and zinc and their alloys.

#### **CONDITIONS TO AVOID:**

Reactions with mineral acids generate heat. Reaction with non-ferrous metals generates hydrogen gas which may cause explosion under appropriate conditions.

### 11. TOXICOLOGICAL INFORMATION

#### **Reagent (B)**

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

#### **Sodium hydroxide:**

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 sodium hydroxide is a confirmed corrosive substance.

This product contains greater than 5 % of sodium hydroxide which is considered to be **VERY CORROSIVE** according to the criteria of the National Commission (Worksafe Australia).

#### **Reagent (A)**

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

#### **Picric acid:**

Oral LD50(rat): 200 mg/kg

Picric acid dust will cause severe irritation and is a suspected skin allergen. Due to the low concentration of picric acid in this product, which is below the cut-off it is not anticipated to cause allergic skin reactions.

#### **ACUTE HEALTH EFFECTS**

##### **Swallowed:**

##### **Reagent (B)**

Will cause severe burns to the mouth, mucous membranes, throat, oesophagus and stomach with effects including: Spontaneous vomiting with diarrhoea and possible bloody stools. Small quantities, approximately 20-50 ml, ingested (swallowed) will cause death.

##### **Reagent (A)**

May cause irritation which may lead to vomiting. Swallowing of large quantities may result in nausea, vomiting and diarrhoea.

##### **Eye:**

##### **Reagent (B)**

Will cause severe burns to the eyes with effects including: Pain, tearing, corneal opacity and blindness. If prompt action is not taken, permanent eye damage will occur.

##### **Reagent (A)**

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:**

##### **Reagent (B)**

Will cause **delayed** severe burns to the skin, with effects including; Redness, pain, itchiness and a slippery feel to the skin.

##### **Reagent (A)**

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

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### 11. TOXICOLOGICAL INFORMATION (continued)

**Inhaled:****Reagent (B)**

Mists from this product will cause severe irritation to the nose, throat and respiratory system.

**Reagent (A)**

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

**Chronic:****Reagent (B)**

Prolonged or repeated skin contact will lead to necrosis (death) of the skin.

**Reagent (A)**

Prolonged or repeated skin contact may lead to drying / defatting and possible dermatitis in some susceptible individuals.

### 12. ECOLOGICAL INFORMATION

No information is available for this product, however, for sodium hydroxide component:

**Water pollution:**

**Persistency:** Can persist for extended periods of time.

**Effect on water treatment process:** Can raise pH and interfere with coagulation.

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 (B)**

**UN Number:** 1824

**Proper Shipping Name:** SODIUM HYDROXIDE SOLUTION

**Dangerous Goods Class:** 8

**Packing Group:** III

**Hazchem Code:** 2R

Classified as a CLASS 8 (CORROSIVE) Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail, 6th Edition.

Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following:

- Class 1
- Class 4.3
- Class 5
- Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids
- Class 7

and are incompatible with food and food packaging in any quantity.

**Emergency information(Transport):**

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

For TOXIC AND/OR CORROSIVE Guide No: 37

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

**PROPER SHIPPING NAME:** SODIUM HYDROXIDE SOLUTION

**UN No:** UN1824

**CLASS:** 8

**PACK GROUP:** II

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### 14. TRANSPORT INFORMATION (continued)

**Reagent (A)**

**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.

**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.

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

**PROPER SHIPPING NAME:** CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.(PICRIC ACID)

**UN No:** UN3265

**CLASS:** 8

**PACK GROUP:** III

### 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.

### 16. OTHER INFORMATION

Issue date: July, 2004

**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]

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

IM IMDG - International Maritime Dangerous Goods

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### 16. OTHER INFORMATION (continued)

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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**END OF MSDS**