# Safety Data Sheet
## according to WHS Regulations

Printing date 13.02.2017 Version number 11 Revision: 04.01.2017

Hazardous according to criteria of Australian Safety and Compensation Council.

## 1 Identification

· **Product identifier**

· **Trade name: Pyridinium-Crosslinks by HPLC, REAG 1**

· **Article number:** 1956571
· **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the mixture** In-Vitro-laboratory reagent or component

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Bio-Rad Laboratories Pty., Ltd.
Level 5, 446 Victoria Road
Gladesville, New South Wales 2111
Phone: +61 (2) 9914-2800
Fax: +61 (2) 9914-2888

· **Further information obtainable from:**
Technical Support:
E-mail: TechSupport.ANZCDG@bio-rad.com
· **Emergency telephone number:**
GBK Gefahrgut Büro GmbH
Tel.: 0049(0)6123-84463

## 2 Hazard(s) Identification

· **Classification of the substance or mixture**
Flam. Liq. 2 H225 Highly flammable liquid and vapour.
Acute Tox. 4 H312 Harmful in contact with skin.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.

· **Label elements**
· **GHS label elements**
The product is classified and labelled according to the Globally Harmonised System (GHS).
· **Hazard pictograms**

GHS02 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**
acetonitrile
· **Hazard statements**
Highly flammable liquid and vapour.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
· **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Use explosion-proof electrical/ventilating/lighting equipment.

(Contd. on page 2)

# Safety Data Sheet
## according to WHS Regulations

Printing date 13.02.2017 Version number 11 Revision: 04.01.2017

**Trade name: Pyridinium-Crosslinks by HPLC, REAG 1**

(Contd. of page 1)

*Wear protective gloves/protective clothing/eye protection/face protection.*
*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
*Dispose of contents/container in accordance with local/regional/national/international regulations.*
· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

## 3 Composition and Information on Ingredients

· ***Chemical characterisation: Mixtures***
· ***Description:*** *Mixture of substances listed below with nonhazardous additions.*

| · **Dangerous components:** | | |
|---|---|---|
| 75-05-8 | acetonitrile<br>Flam. Liq. 2, H225; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Irrit. 2A, H319 | 50-100% |
| 64-19-7 | acetic acid<br>Flam. Liq. 3, H226; Skin Corr. 1A, H314 | 10-<25% |

· ***Additional information:*** *For the wording of the listed hazard phrases refer to section 16.*

## 4 First Aid Measures

· ***Description of first aid measures***
· ***General information:***
*Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*
· ***After inhalation:***
*Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.*
*In case of unconsciousness place patient stably in side position for transportation.*
· ***After skin contact:*** *Immediately wash with water and soap and rinse thoroughly.*
· ***After eye contact:***
*Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.*
· ***After swallowing:*** *Call for a doctor immediately.*
· ***Information for doctor:***
· ***Most important symptoms and effects, both acute and delayed*** *No further relevant information available.*
· ***Indication of any immediate medical attention and special treatment needed***
*No further relevant information available.*

## 5 Fire Fighting Measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:***
*CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
· ***Special hazards arising from the substance or mixture***
*Hydrogen cyanide (HCN)*
*Carbon monoxide (CO)*

(Contd. on page 3)

# Safety Data Sheet
## according to WHS Regulations

Printing date 13.02.2017 Version number 11 Revision: 04.01.2017

**Trade name: Pyridinium-Crosslinks by HPLC, REAG 1**

(Contd. of page 2)

· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Mouth respiratory protective device.

## 6 Accidental Release Measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

## 7 Handling and Storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Specific end use(s)** No further relevant information available.

## 8 Exposure controls and personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Control parameters**

| · **Ingredients with limit values that require monitoring at the workplace:** | |
|---|---|
| **75-05-8 acetonitrile** | |
| WES | Short-term value: 101 mg/m³, 60 ppm<br>Long-term value: 67 mg/m³, 40 ppm<br>Sk |

(Contd. on page 4)

# Safety Data Sheet
## according to WHS Regulations

Printing date 13.02.2017 Version number 11 Revision: 04.01.2017

**Trade name: Pyridinium-Crosslinks by HPLC, REAG 1**

(Contd. of page 3)

| **64-19-7 acetic acid** | |
|---|---|
| WES | Short-term value: 37 mg/m³, 15 ppm<br>Long-term value: 25 mg/m³, 10 ppm |

· **Additional information:** The lists valid during the making were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Protective work clothing

## 9 Physical and Chemical Properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Appearance:** | |
| **Form:** | Fluid |
| **Colour:** | Colourless |
| · **Odour:** | Aromatic |
| · **Odour threshold:** | Not determined. |
| · **pH-value at 20 °C:** | 4.5 |

(Contd. on page 5)

# Safety Data Sheet
## according to WHS Regulations

Printing date 13.02.2017 Version number 11 Revision: 04.01.2017

**Trade name: Pyridinium-Crosslinks by HPLC, REAG 1**

(Contd. of page 4)

| | |
|---|---|
| · **Change in condition** | |
| **Melting point/freezing point:** | Undetermined. |
| **Initial boiling point and boiling range:** | 81 °C |
| · **Flash point:** | 2 °C |
| · **Flammability (solid, gas):** | Not applicable. |
| · **Ignition temperature:** | 485 °C |
| · **Decomposition temperature:** | Not determined. |
| · **Auto-ignition temperature:** | Product is not selfigniting. |
| · **Explosive properties:** | Product is not explosive. However, formation of explosive air/ vapour mixtures are possible. |
| · **Explosion limits:** | |
| **Lower:** | 3.0 Vol % |
| **Upper:** | 19.9 Vol % |
| · **Vapour pressure at 20 °C:** | 97 hPa |
| · **Density at 20 °C:** | 0.84 g/cm³ |
| · **Relative density** | Not determined. |
| · **Vapour density** | Not determined. |
| · **Evaporation rate** | Not determined. |
| · **Solubility in / Miscibility with water:** | Fully miscible. |
| · **Partition coefficient: n-octanol/water:** | Not determined. |
| · **Viscosity:** | |
| **Dynamic:** | Not determined. |
| **Kinematic:** | Not determined. |
| · **Other information** | No further relevant information available. |

## 10 Stability and Reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** Reacts with acids, alkalis and oxidising agents.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:**
Hydrogen cyanide (prussic acid)
Carbon monoxide and carbon dioxide

## 11 Toxicological Information

· **Information on toxicological effects**
· **Acute toxicity**
· **Primary irritant effect:**
· **Skin corrosion/irritation** Irritant to skin and mucous membranes.
· **Serious eye damage/irritation** Irritating effect.
· **Respiratory or skin sensitisation** No sensitising effects known.

(Contd. on page 6)

# Safety Data Sheet
## according to WHS Regulations

Printing date 13.02.2017 Version number 11 Revision: 04.01.2017

**Trade name: Pyridinium-Crosslinks by HPLC, REAG 1**

(Contd. of page 5)

· **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Irritant

## 12 Ecological Information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behaviour in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**
· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **ADG, IMDG, IATA** | UN2924 |
| · **UN proper shipping name** | |
| · **ADG** | 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ACETONITRILE, ACETIC ACID, GLACIAL) |
| · **IMDG, IATA** | FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ACETONITRILE, ACETIC ACID, GLACIAL) |
| · **Transport hazard class(es)** | |
| · **ADG** |  |
| · **Class** | 3 Flammable liquids. |

(Contd. on page 7)

# Safety Data Sheet
## according to WHS Regulations

Printing date 13.02.2017 Version number 11 Revision: 04.01.2017

**Trade name: Pyridinium-Crosslinks by HPLC, REAG 1**

(Contd. of page 6)

| | |
|---|---|
| · **Label** | 3+8 |
| · **IMDG** | |
|  | |
| · **Class** | 3 Flammable liquids. |
| · **Label** | 3/8 |
| · **IATA** | |
|  | |
| · **Class** | 3 Flammable liquids. |
| · **Label** | 3 (8) |
| · **Packing group** | |
| · **ADG, IMDG, IATA** | II |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | Yes |
| · **Special precautions for user** | Warning: Flammable liquids. |
| · **Danger code (Kemler):** | 338 |
| · **EMS Number:** | F-E,S-C |
| · **Segregation groups** | Acids |
| · **Stowage Category** | B |
| · **Stowage Code** | SW2 Clear of living quarters. |
| · **Transport in bulk according to Annex II of Marpol and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADG** | |
| · **Limited quantities (LQ)** | 1L |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · **Transport category** | 2 |
| · **Tunnel restriction code** | D/E |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 1L |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · **UN "Model Regulation":** | UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ACETONITRILE, ACETIC ACID, GLACIAL), 3 (8), II |



(Contd. on page 8)

# Safety Data Sheet
## according to WHS Regulations

Printing date 13.02.2017 Version number 11 Revision: 04.01.2017

**Trade name: Pyridinium-Crosslinks by HPLC, REAG 1**

(Contd. of page 7)

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Australian Inventory of Chemical Substances**

All ingredients are listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

| | | |
|---|---|---|
| 64-19-7 | acetic acid | S2, S5, S6 |

· **GHS label elements**
The product is classified and labelled according to the Globally Harmonised System (GHS).
· **Hazard pictograms**

GHS02 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**
acetonitrile
· **Hazard statements**
Highly flammable liquid and vapour.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
· **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Use explosion-proof electrical/ventilating/lighting equipment.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **Seveso category** P5c FLAMMABLE LIQUIDS
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

(Contd. on page 9)

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## according to WHS Regulations

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***Trade name: Pyridinium-Crosslinks by HPLC, REAG 1***

(Contd. of page 8)

· ***Department issuing SDS:***
*Bio-Rad Laboratories GmbH*
*Heidemannstrasse 164*
*D-80939 Munich*

· ***Contact:***
*Technical Support:*
*E-Mail: cts-ce@bio-rad.com*

· ***Abbreviations and acronyms:***
*RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*
*IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)*
*ICAO: International Civil Aviation Organisation*
*ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)*
*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*
*IMDG: International Maritime Code for Dangerous Goods*
*IATA: International Air Transport Association*
*EINECS: European Inventory of Existing Commercial Chemical Substances*
*ELINCS: European List of Notified Chemical Substances*
*CAS: Chemical Abstracts Service (division of the American Chemical Society)*
*PBT: Persistent, Bioaccumulative and Toxic*
*vPvB: very Persistent and very Bioaccumulative*
*Flam. Liq. 2: Flammable liquids – Category 2*
*Flam. Liq. 3: Flammable liquids – Category 3*
*Acute Tox. 4: Acute toxicity – Category 4*
*Skin Corr. 1A: Skin corrosion/irritation – Category 1A*
*Skin Irrit. 2: Skin corrosion/irritation – Category 2*
*Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*