



10/07/2008

**Kit components**

Product code	Description
--------------	-------------

<b>1633003</b>	<b>ProteoMiner Sequential Elution Reagents</b>
----------------	--

Components:

10010273	Sequential Elution Reagent 1
10010274	Sequential Elution Reagent 2
10010275	Sequential Elution Reagent 3
10010276	Sequential Elution Reagent 4
10010404	Plasma Preparation Buffer

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Sequential Elution Reagent 1
- **Article number:** 10010273, 10010281
- **Application of the substance / the preparation** Laboratory chemicals
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories (Canada) Ltd.,  
1329 Meyerside Drive,  
Mississauga, Ontario  
L5T 1C9  
Canada  
phone: 1(905)712-2771 fax: 1-905-712-2990
- **Information department:** Technical services, customer support.
- **Emergency information:** 1(905)712-2771

**2 Composition/information on ingredients**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 7732-18-5 EINECS: 231-791-2 RTECS: ZC 0110000	water		50-100%
CAS: 7647-14-5 EINECS: 231-598-3	sodium chloride	Xi; R 36/38 Warning: Exclamation mark 3.2/2, 3.3/2A	5-10%

- **Additional information** For the wording of the listed risk phrases refer to section 16.

**3 Hazards identification**

- **Hazard description:** not applicable
- **Information pertaining to particular dangers for man and environment**  
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.
- **GHS label elements** Void

**4 First aid measures**

- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Induce vomiting and call for medical help.

**5 Fire fighting measures**

- **Suitable extinguishing agents** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

(Contd. on page 2)

## Safety Data Sheet

### According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

Trade name: *Sequential Elution Reagent 1*

(Contd. of page 1)

· **Protective equipment:** *No special measures required.*

### 6 Accidental release measures

- **Person-related safety precautions:** *Not required.*
- **Measures for environmental protection:**
  - Dilute with plenty of water.*
  - Do not allow to enter sewers/ surface or ground water.*
- **Measures for cleaning/collecting:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).*
  - Dispose contaminated material as waste according to item 13.*
- **Additional information:** *No dangerous substances are released.*

### 7 Handling and storage

- **Handling**
- **Information for safe handling:**
  - No special measures required.*
  - No special precautions are necessary if used correctly.*
- **Information about protection against explosions and fires:** *No special measures required.*
- **Storage**
- **Requirements to be met by storerooms and receptacles:** *According to product specification*
- **Information about storage in one common storage facility:** *Not required.*
- **Further information about storage conditions:** *None.*

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** *No further data; see item 7.*
- **Components with limit values that require monitoring at the workplace:**
  - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.*
- **Additional information:** *The lists that were valid during the creation were used as basis.*
- **Personal protective equipment**
- **General protective and hygienic measures** *The usual precautionary measures should be adhered to when handling chemicals.*
- **Breathing equipment:** *Not required.*
- **Protection of hands:** *Protective gloves.*
- **Material of gloves** *Synthetic gloves*
- **Penetration time of glove material**
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*
- **Eye protection:** *Safety glasses*

### 9 Physical and chemical properties:

#### · General Information

**Form:** *Fluid*

(Contd. on page 3)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 1**

(Contd. of page 2)

<b>Colour:</b>	Clear
<b>Odour:</b>	Odourless
<b>· Change in condition</b>	
<b>Melting point/Melting range:</b>	undetermined
<b>Boiling point/Boiling range:</b>	100°C
<b>· Flash point:</b>	Not applicable
<b>· Self igniting:</b>	Product is not selfigniting.
<b>· Danger of explosion:</b>	Product does not present an explosion hazard.
<b>· Vapour pressure at 20°C:</b>	23 hPa
<b>· Density:</b>	Not determined
<b>· Solubility in / Miscibility with Water:</b>	Fully miscible
<b>· pH-value at 20°C:</b>	7.4
<b>· Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	93.7 %
<b>· Solids content:</b>	6.3 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** No dangerous decomposition products known

**11 Toxicological information**

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

**12 Ecological information:**

- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

(Contd. on page 4)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 1**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

(Contd. of page 3)

**13 Disposal considerations**

- **Product:**
- **Recommendation** Hand over to hazardous waste disposers.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

- **TDG (Transport dangerous goods):**
- **TDG class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -
- **UN "Model Regulation":** -
- **Transport/Additional information:** Not dangerous according to the above specifications.

**15 Regulations**

- **Markings according to EU guidelines:**  
Observe the general safety regulations when handling chemicals  
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).
- **Safety phrases:**  
35 This material and its container must be disposed of in a safe way.
- **National regulations**  
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations
- **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

**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.

- **Department issuing MSDS:** Environmental Health and Safety.
- **Contact:**  
Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000  
  
Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

(Contd. on page 5)

**Safety Data Sheet**  
**According to 91/155 EEC**

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 1**

(Contd. of page 4)

**· Abbreviations and acronyms:***IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)**ICAO: International Civil Aviation Organization**ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)**GHS: Globally Harmonized System of Classification and Labelling of Chemicals*

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Sequential Elution Reagent 2
- **Article number:** 10010274, 10010282
- **Application of the substance / the preparation** Laboratory chemicals
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories (Canada) Ltd.,  
1329 Meyerside Drive,  
Mississauga, Ontario  
L5T 1C9  
Canada
- phone: 1(905)712-2771 fax: 1-905-712-2990
- **Information department:** Technical services, customer support.
- **Emergency information:** 1(905)712-2771

**2 Composition/information on ingredients**

- **Chemical characterization:**
- **CAS No. Description:**  
7732-18-5 water
- **Identification number(s):**
- **EINECS Number:** 231-791-2
- **Additional information:** For the wording of the listed risk phrases refer to section 16.
- **Chemical characterization**

· **Dangerous components:**

CAS: 56-40-6	glycine	Xn, Xi; R 22-36	1,0-2,5%
EINECS: 200-272-2		Danger: Skull and crossbones 3.1.0/3, 3.3/2A	
RTECS: MB 7600000			

**3 Hazards identification**

- **Hazard description:** not applicable
- **Information pertaining to particular dangers for man and environment** not applicable
- **GHS label elements** Void

**4 First aid measures**

- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Induce vomiting and call for medical help.

**5 Fire fighting measures**

- **Suitable extinguishing agents** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

(Contd. on page 2)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 2**

(Contd. of page 1)

· **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Dilute with plenty of water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.
- **Additional information:** No dangerous substances are released.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures** The usual precautionary measures should be adhered to when handling chemicals.
- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves.
- **Material of gloves** Synthetic gloves
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	Fluid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Odourless

(Contd. on page 3)

## Safety Data Sheet

According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

Trade name: Sequential Elution Reagent 2

(Contd. of page 2)

- **Change in condition**  
*Melting point/Melting range:* 0°C  
*Boiling point/Boiling range:* 100°C
- **Flash point:** Not applicable
- **Danger of explosion:** Product does not present an explosion hazard.
- **Vapour pressure at 20°C:** 23 hPa
- **Density at 20°C:** 1 g/cm<sup>3</sup>
- **Solubility in / Miscibility with Water:** Fully miscible
- **pH-value at 20°C:** 2.4
- **Organic solvents:** 0.0 %
- **Water:** 98.5 %
- **Solids content:** 1.5 %

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** No dangerous decomposition products known

### 11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
 When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.  
 The substance is not subject to classification according to the latest version of the EU lists.

### 12 Ecological information:

- **General notes:** Generally not hazardous for water.

### 13 Disposal considerations

- **Product:**
- **Recommendation** Hand over to hazardous waste disposers.

(Contd. on page 4)

CDN

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 2**

(Contd. of page 3)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

- **TDG (Transport dangerous goods):**
- **TDG class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -
- **UN "Model Regulation":** -
- **Transport/Additional information:** Not dangerous according to the above specifications.

**15 Regulations**

- **Markings according to EU guidelines:**  
Observe the general safety regulations when handling chemicals  
The substance is not subject to classification according to EU lists and other sources of literature known to us.  
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).
- **Safety phrases:**  
35 This material and its container must be disposed of in a safe way.
- **National regulations**  
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations
- **Water hazard class:** Generally not hazardous for water.

**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.
- **Department issuing MSDS:** Environmental Health and Safety.
  - **Contact:**  
Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000  
  
Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000
  - **Abbreviations and acronyms:**  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals

(Contd. on page 5)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 2**

(Contd. of page 4)

EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)

· **\* Data compared to the previous version altered.**

CDN

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 10/02/2008

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Sequential Elution Reagent 3
- **Article number:** 10010275, 10010283
- **Application of the substance / the preparation** Laboratory chemicals
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories (Canada) Ltd.,  
1329 Meyerside Drive,  
Mississauga, Ontario  
L5T 1C9  
Canada  
phone: 1(905)712-2771 fax: 1-905-712-2990
- **Information department:** Technical services, customer support.
- **Emergency information:** 1(905)712-2771

**2 Composition/information on ingredients**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 107-21-1 EINECS: 203-473-3 RTECS: KW 2975000	ethane-1,2-diol	Xn; R 22 Danger: Skull and crossbones 3.1.O/3	50-100%
CAS: 7732-18-5 EINECS: 231-791-2 RTECS: ZC 0110000	water		35-50%

- **Additional information** For the wording of the listed risk phrases refer to section 16.

**3 Hazards identification**

- **Hazard description:**  
Xn Harmful
- **Information pertaining to particular dangers for man and environment**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.  
R 22 Harmful if swallowed.
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.
- **GHS label elements**  
Exclamation mark **Warning**  
3.1/4 - Harmful if swallowed.
- **Prevention:**  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.
- **Response:**  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
Rinse mouth.

(Contd. on page 2)

## Safety Data Sheet

According to 91/155 EEC

Printing date 10/07/2008

Revision: 10/02/2008

**Trade name: Sequential Elution Reagent 3**

(Contd. of page 1)

**· Disposal:**

Dispose of contents/container in accordance with local/regional/national/international regulations.

### 4 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; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Call for a doctor immediately.

### 5 Fire fighting measures

- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:**
  - Dilute with plenty of water.
  - Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.

### 7 Handling and storage

- **Handling**
- **Information for safe handling:**
  - Ensure good ventilation/exhaustion at the workplace.
  - Prevent formation of aerosols.
  - No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

### 8 Exposure controls and personal protection

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

(Contd. on page 3)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 10/02/2008

**Trade name: Sequential Elution Reagent 3**

(Contd. of page 2)

**· Components with limit values that require monitoring at the workplace:**

**107-21-1 ethane-1,2-diol**

EL ()	Short-term value: C 100* 20** C 50*** mg/m <sup>3</sup> Long-term value: 10** mg/m <sup>3</sup> *Aerosol; **Particulate; ***Vapour
-------	--

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

· **Personal protective equipment**

· **General protective and hygienic measures**

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:** Protective gloves.

· **Material of gloves:** Synthetic gloves

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Safety glasses

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	Fluid
<b>Colour:</b>	Clear
<b>Odour:</b>	Odourless

· **Change in condition**

**Melting point/Melting range:** undetermined

**Boiling point/Boiling range:** 100°C

· **Flash point:** > 100°C

· **Ignition temperature:** 410°C

· **Self igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

**Lower:** 3.2 Vol %

**Upper:** 53.0 Vol %

· **Vapour pressure at 20°C:** 23 hPa

· **Density at 20°C:** 1.06322 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

**Water:** Fully miscible

· **Solvent content:**

· **Organic solvents:** 0.0 %

(Contd. on page 4)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 10/02/2008

**Trade name: Sequential Elution Reagent 3**

(Contd. of page 3)

· **Water:** 40.0 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** No dangerous decomposition products known

**11 Toxicological information**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**107-21-1 ethane-1,2-diol**

Oral	LD50	5840 mg/kg (rat)
Dermal	LD50	9530 mg/kg (rbt)

· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** No irritating effect.

· **Sensitization:** No sensitizing effects known.

· **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

**12 Ecological information:**

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**13 Disposal considerations**

· **Product:**

· **Recommendation**

Hand over to hazardous waste disposers.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 10/02/2008

**Trade name: Sequential Elution Reagent 3**

(Contd. of page 4)

**14 Transport information**

- **TDG (Transport dangerous goods):**
- **TDG class:** -

- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No

- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

- **UN "Model Regulation":** -

**15 Regulations**

- **Markings according to EU guidelines:**  
*The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials*

- **Code letter and hazard designation of product:**  
*Xn Harmful*

- **Hazard-determining components of labelling:**  
*ethane-1,2-diol*

- **Risk phrases:**  
*22 Harmful if swallowed.*

- **Safety phrases:**  
*23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).*  
*36 Wear suitable protective clothing.*  
*60 This material and its container must be disposed of as hazardous waste.*

- **National regulations**  
*This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations*

Class	Share in %
NK	50-100

- **Water hazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.*

**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.*

- **Department issuing MSDS:** *Environmental Health and Safety.*

- **Contact:**  
*Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000*

*Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000*

- **Abbreviations and acronyms:**  
*IMDG: International Maritime Code for Dangerous Goods*  
*IATA: International Air Transport Association*  
*IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)*

(Contd. on page 6)

**Safety Data Sheet**  
**According to 91/155 EEC**

Printing date 10/07/2008

Revision: 10/02/2008

**Trade name: Sequential Elution Reagent 3**

(Contd. of page 5)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

**\* Data compared to the previous version altered.**

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Sequential Elution Reagent 4
- **Article number:** 10010276, 10010284
- **Application of the substance / the preparation** Laboratory chemicals
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories (Canada) Ltd.,  
1329 Meyerside Drive,  
Mississauga, Ontario  
L5T 1C9  
Canada
- **Information department:** Technical services, customer support.
- **Emergency information:** 1(905)712-2771

phone: 1(905)712-2771 fax: 1-905-712-2990

**2 Composition/information on ingredients**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 7732-18-5 EINECS: 231-791-2 RTECS: ZC 0110000	water		50-100%
CAS: 67-63-0 EINECS: 200-661-7 RTECS: NT 8050000	propan-2-ol	Xi, F; R 11-36-67 Danger: Flame 2.6/2 Warning: Exclamation mark 3.3/2A, 3.8/3	20-35%
CAS: 75-05-8 EINECS: 200-835-2 RTECS: AL 7700000	acetonitrile	Xn, Xi, F; R 11-20/21/22-36 Danger: Flame 2.6/2; Skull and crossbones 3.1.O/3, 3.1.D/3, 3.1.I/4, 3.3/2A	10-20%

- **Additional information** For the wording of the listed risk phrases refer to section 16.

**3 Hazards identification**

- **Hazard description:**  
Xi Irritant  
F Highly flammable
- **Information pertaining to particular dangers for man and environment**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.  
Has a narcotizing effect.  
R 11 Highly flammable.  
R 36 Irritating to eyes.  
R 67 Vapours may cause drowsiness and dizziness.
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.
- **GHS label elements**  
Flame **Danger**  
2.6/2 - Highly flammable liquid and vapour.

(Contd. on page 2)

## Safety Data Sheet

### According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 4**

(Contd. of page 1)

**Exclamation mark Warning**

3.3/2A - Causes serious eye irritation.

3.8/3 - May cause drowsiness or dizziness.

**Warning**

3.1/5 - May be harmful if swallowed.

3.1/5 - May be harmful in contact with skin.

**Prevention:**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/ equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Call a POISON CENTER or doctor/physician if you feel unwell.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.**Storage:**

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

**Disposal:**

Dispose of contents/container in accordance with local/regional/national/international regulations.

#### 4 First aid measures

- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing** Induce vomiting and call for medical help.

#### 5 Fire fighting measures

- **Suitable extinguishing agents** CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

#### 6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**  
Prevent seepage into sewage system, workpits and cellars.

(Contd. on page 3)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 4**

(Contd. of page 2)

- Dilute with plenty of water.
- Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
No special measures required.  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **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 receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.

**8 Exposure controls and personal protection**

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

- **Components with limit values that require monitoring at the workplace:**

**67-63-0 propan-2-ol**

EL ()	Short-term value: 400 ppm
	Long-term value: 200 ppm

**75-05-8 acetonitrile**

EL ()	20 ppm
	Skin

- **Additional information:** The lists that were valid during the creation were used as basis.

- **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.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:** Protective gloves.
- **Material of gloves:** Synthetic gloves

(Contd. on page 4)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 4**

(Contd. of page 3)

- **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:**  
Safety glasses  
Tightly sealed goggles.

**9 Physical and chemical properties:**

· **General Information**

**Form:** Fluid  
**Colour:** Colourless  
**Odour:** Like alcohol

· **Change in condition**

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** 81°C

· **Flash point:** ≤ 21°C

· **Ignition temperature:** 425°C

· **Self igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Explosion limits:**

**Lower:** 2.0 Vol %  
**Upper:** 16.0 Vol %

· **Vapour pressure at 20°C:** 97 hPa

· **Density at 20°C:** 0.8923 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

**Water:** Fully miscible

· **pH-value at 20°C:** < 2.4

· **Solvent content:**

· **Organic solvents:** 29.5 %  
· **Water:** 55.9 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** No dangerous decomposition products known

CDN

(Contd. on page 5)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

Trade name: Sequential Elution Reagent 4

(Contd. of page 4)

**11 Toxicological information**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**67-63-0 propan-2-ol**

Oral	LD50	4570 mg/kg (rat)
Dermal	LD50	13400 mg/kg (rab)
Inhalative	LC50/4 h	30 mg/l (rat)

**75-05-8 acetonitrile**

Oral	LD50	2730 mg/kg (rat)
Dermal	LD50	1250 mg/kg (rbt)

· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** Irritating effect.

· **Sensitization:** No sensitizing effects known.

· **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:

Irritant

**12 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.

**13 Disposal considerations**

· **Product:**

· **Recommendation**

Hand over to hazardous waste disposers.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

· **TDG (Transport dangerous goods):**

· **TDG class:** 3 Flammable liquids.

· **Danger code (Kemler):** 33

· **UN-Number:** 1993

· **Packaging group:** II

(Contd. on page 6)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 4**

(Contd. of page 5)

· **Label** 3  
· **Description of goods:** 1993 FLAMMABLE LIQUID, N.O.S. (vapor pressure at 50°C at most 110 kPa) (ISOPROPANOL (ISOPROPYL ALCOHOL), ACETONITRILE)

· **Maritime transport IMDG:**  
· **IMDG Class:** 3  
· **UN Number:** 1993  
· **Label** 3  
· **Packaging group:** II  
· **EMS Number:** F-E,S-E  
· **Marine pollutant:** No  
· **Proper shipping name:** FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL), ACETONITRILE)

· **Air transport ICAO-TI and IATA-DGR:**  
· **ICAO/IATA Class:** 3  
· **UN/ID Number:** 1993  
· **Label** 3  
· **Packaging group:** II  
· **Proper shipping name:** FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL), ACETONITRILE)

· **UN "Model Regulation":** UN1993, FLAMMABLE LIQUID, N.O.S., 3, II

**15 Regulations**

· **Markings according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

· **Code letter and hazard designation of product:**

Xi Irritant

F Highly flammable

· **Risk phrases:**

11 Highly flammable.

36 Irritating to eyes.

67 Vapours may cause drowsiness and dizziness.

· **Safety phrases:**

7/9 Keep container tightly closed and in a well-ventilated place.

16 Keep away from sources of ignition - No smoking.

23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

25 Avoid contact with eyes.

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

60 This material and its container must be disposed of as hazardous waste.

· **National regulations**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations

Class	Share in %
NK	20-35

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

**Safety Data Sheet**  
**According to 91/155 EEC**

Printing date 10/07/2008

Revision: 09/16/2008

**Trade name: Sequential Elution Reagent 4**

(Contd. of page 6)

**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.*

· **Department issuing MSDS:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 08/27/2008

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Plasma Preparation Buffer
- **Article number:** 10010404, 10010408
- **Application of the substance / the preparation** Laboratory chemicals
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories (Canada) Ltd.,  
1329 Meyerside Drive,  
Mississauga, Ontario  
L5T 1C9  
Canada
- phone: 1(905)712-2771 fax: 1-905-712-2990
- **Information department:** Technical services, customer support.
- **Emergency information:** 1(905)712-2771

**2 Composition/information on ingredients**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 7732-18-5 EINECS: 231-791-2 RTECS: ZC 0110000	water	50-100%
CAS: 7365-45-9 EINECS: 230-907-9	4-(2-hydroxyethyl)piperazine-1-ethanesulfonic acid	20-35%

- **Additional information** For the wording of the listed risk phrases refer to section 16.

**3 Hazards identification**

- **Hazard description:** not applicable
- **Information pertaining to particular dangers for man and environment**  
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.
- **GHS label elements** Void

**4 First aid measures**

- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Induce vomiting and call for medical help.

**5 Fire fighting measures**

- **Suitable extinguishing agents** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

(Contd. on page 2)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 08/27/2008

**Trade name: Plasma Preparation Buffer**

(Contd. of page 1)

· **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures** The usual precautionary measures should be adhered to when handling chemicals.
- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves.
- **Material of gloves** Synthetic gloves
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	Fluid
<b>Colour:</b>	Clear
<b>Odour:</b>	Odourless

(Contd. on page 3)

**Safety Data Sheet**  
According to 91/155 EEC

Printing date 10/07/2008

Revision: 08/27/2008

**Trade name: Plasma Preparation Buffer**

(Contd. of page 2)

- **Change in condition**  
Melting point/Melting range: undetermined  
Boiling point/Boiling range: 100°C
- **Flash point:** Not applicable
- **Self igniting:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Vapour pressure at 20°C:** 23 hPa
- **Density:** Not determined
- **Solubility in / Miscibility with Water:** Fully miscible
- **pH-value at 20°C:** 7.4
- **Solvent content:**
- **Organic solvents:** 0.0 %
- **Water:** 70.1 %
- **Solids content:** 29.4 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** No dangerous decomposition products known

**11 Toxicological information**

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

**12 Ecological information:**

- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## Safety Data Sheet

### According to 91/155 EEC

Printing date 10/07/2008

Revision: 08/27/2008

Trade name: Plasma Preparation Buffer

(Contd. of page 3)

### 13 Disposal considerations

- **Product:**
- **Recommendation**  
Hand over to hazardous waste disposers.  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **TDG (Transport dangerous goods):**
- **TDG class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -
- **UN "Model Regulation":** -
- **Transport/Additional information:** Not dangerous according to the above specifications.

### 15 Regulations

- **Markings according to EU guidelines:**  
Observe the general safety regulations when handling chemicals  
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).
- **Safety phrases:**  
60 This material and its container must be disposed of as hazardous waste.
- **National regulations**  
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations
- **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

### 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.
- **Department issuing MSDS:** Environmental Health and Safety.
  - **Contact:**  
Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000
  - Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

(Contd. on page 5)

**Safety Data Sheet**  
**According to 91/155 EEC**

Printing date 10/07/2008

Revision: 08/27/2008

**Trade name: Plasma Preparation Buffer**

(Contd. of page 4)

**· Abbreviations and acronyms:***IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)**ICAO: International Civil Aviation Organization**ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)**GHS: Globally Harmonized System of Classification and Labelling of Chemicals***· \* Data compared to the previous version altered.**

CDN