

01/21/2015

Kit Components

Product code

Description

171304060	Bio-Plex Pro Angiogenesis Reagent Kit
171304061	

Components:

10014822	Bio-Plex® Assay Buffer
171304500	Bio-Plex TM Wash Buffer
10014639	Bio-Plex TM Detection Ab Diluent
171304501	Streptavidin-PE

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015 Reviewed on 12/24/2014 1 Identification · Product identifier · Trade name: Bio-Plex® Assay Buffer · Catalog or product number: 10014822, 9703892, 9704415, 171304100, 10014939, 10014940 · Relevant identified uses of the substance or mixture and uses advised against No further relevant information available. · Application of the substance / the mixture Laboratory chemicals · Details of the supplier of the safety data sheet · Manufacturer/Supplier: Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547 (510)741-1000 · Information department: Technical services, customer support lsg techserv us@bio-rad.com · Emergency telephone number: 1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT. 510-741-1000 2 Hazard(s) identification Classification of the substance or mixture The product is not classified according to the Globally Harmonized System (GHS). Classification according to Directive 67/548/EEC or Directive 1999/45/EC not applicable · Information concerning particular hazards for human 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. The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information. · Label elements · GHS label elements Void · Hazard pictograms Void · Signal word Void · Hazard statements Void

· Additional information: Contact with acids may cause release of toxic gases

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description:
- 7732-18-5 water

(Contd. on page 2)

Page 1/7

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex® Assay Buffer

(Conto. of page 1)	Contd. of page	: 1)
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· EC numbe · Chemical (<i>ion number(s):</i> er: 231-791-2 characterization: Mixtures n: Mixture of the substances listed below with non-hazardous additions.	
· Listing of	dangerous and non-hazardous components:	
	Proprietary Reagent C	0.1-1.0%
7732-18-5	water	50-100%
· Additional	information For the wording of the listed risk phrases refer to section 15.	

4 First-aid measures

· Description of 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.
- · 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, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- · Environmental precautions: Dilute with plenty of 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.

Reference to other sections

No dangerous substances are released.

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

· Precautions for safe handling No special measures required.

· Information about protection against explosions and fires: No special measures required.

(Contd. on page 3)

USA

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Trade name: Bio-Plex® Assay Buffer

Reviewed on 12/24/2014

(Contd. of page 2)

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· Conditions for safe storage, including any incompatibilities

· 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.
- · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · 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.
- · Exposure controls
- · Personal protective equipment
- · General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed.
- · 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

· Information on basic physical and chemical properties		
 General Information Appearance: Form: Color: Odor: Odour threshold: 	Liquid Colorless Odorless Not determined.	
· pH-value at 20 °C:	7.4	
 Change in condition Melting point/Melting range: Boiling point/Boiling range: 	0 °C undetermined	
· Flash point:	Not applicable	
· Flammability (solid, gaseous)	Not applicable.	
· Ignition temperature:		
Decomposition temperature:	Not determined.	
· Auto igniting:	Product is not selfigniting.	
		(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex® Assay Buffer

		(Contd. of page 3
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure at 20 °C:	23 hPa	
Density at 20 °C:	1.00579 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/wa	ater): Not determined.	
Viscosity:		
dynamic:	Not determined.	
kinematic:	Not determined.	
Solvent content:		
Organic solvents:	0.0 %	
Water:	97.9 %	
Solids content:	2.0 %	
Other information	No further relevant information available.	

10 Stability and reactivity

- · Reactivity
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · Primary irritant effect:
- · on the skin: No irritant effect.
- **on the eye:** No irritant effect.
- Irritant effect.
- · Sensitization: No sensitizing effects known.

(Contd. on page 5)

USA

Safety Data Sheet

Printing date 01/21/2015

Trade name: Bio-Plex® Assay Buffer

· 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.

- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)
- None of the ingredients is listed.
- · NTP (National Toxicology Program)
- None of the ingredients is listed.
- · OSHA-Ca (Occupational Safety & Health Administration)
- None of the ingredients is listed.
- · Target organs: Not applicable.

12 Ecological information

- · Toxicity
- Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Bioaccumulative potential No further relevant information available.
- Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes: Generally not hazardous for water.
- · 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

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		
· UN-Number · DOT, ADR, ADN, IMDG, IATA	Void	
· UN proper shipping name · DOT, ADR, ADN, IMDG, IATA	Void	
		(Contd. on page 6)



Reviewed on 12/24/2014

(Contd. of page 4)



Safety Data Sheet acc. to OSHA HCS

Page 6/7

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex® Assay Buffer

	(Contd. of page 5)
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA · Class	Void
 Packing group DOT, ADR, IMDG, IATA 	Void
 Environmental hazards: Marine pollutant: 	No
 Special precautions for user 	Not applicable.
 Transport in bulk according to Annex II of MARP and the IBC Code 	OL73/78 Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	-

15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture • SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

 Section 3 	802/304 (40CFR355.30 / 40CFR355.40):		
Proprietary	Proprietary Reagent D		
· Section 3	· Section 313 (40CFR372.65):		
Proprietary	r Reagent D		
· TSCA (Tox	cic Substances Control Act):		
	Proprietary Reagent C		
	Proprietary Reagent A		
Proprietary Reagent D			
7732-18-5	water		

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

National regulations

· Water hazard class: Generally not hazardous for water.

(Contd. on page 7)

USA

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 12/24/2014

(Contd. of page 6)

LISA

Trade name: Bio-Plex® Assay Buffer

· 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.

- · Department issuing SDS: 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 · Date of preparation / last revision 01/21/2015 / -

· Abbreviations and acronyms:

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

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

• * Data compared to the previous version altered.

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015 Reviewed on 12/24/2014 1 Identification · Product identifier · Trade name: Bio-Plex™ Wash Buffer · Catalog or product number: 171304500, 9703893, 9704416, 171304200 Relevant identified uses of the substance or mixture and uses advised against No further relevant information available. · Application of the substance / the mixture Laboratory chemicals · Details of the supplier of the safety data sheet · Manufacturer/Supplier: Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547 (510)741-1000 · Information department: Technical services, customer support lsg techserv us@bio-rad.com · Emergency telephone number: 1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT. 510-741-1000 2 Hazard(s) identification Classification of the substance or mixture The product is not classified according to the Globally Harmonized System (GHS). Classification according to Directive 67/548/EEC or Directive 1999/45/EC not applicable · Information concerning particular hazards for human 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. The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information. · Label elements · GHS label elements Void · Hazard pictograms Void · Signal word Void · Hazard statements Void · Additional information: Contact with acids may cause release of toxic gases · Other hazards · Results of PBT and vPvB assessment · PBT: Not applicable. · vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Substances
- · CAS No. Description:
- 7732-18-5 water

(Contd. on page 2) USA

Page 1/7

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Trade name: Bio-Plex[™] Wash Buffer

Reviewed on 12/24/2014

(Contd. of page 1)

50-100%

Page 2/7

· Identification number(s):

• EC number: 231-791-2

· Chemical characterization: Mixtures

· Description: Mixture of the substances listed below with non-hazardous additions.

· Listing of dangerous and non-hazardous components:

7732-18-5 water

• Additional information For the wording of the listed risk phrases refer to section 15.

4 First-aid measures

- · Description of 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.
- · 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, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- · Environmental precautions: Dilute with plenty of 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.
- · Reference to other sections
- No dangerous substances are released.
- 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

- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.

(Contd. on page 3)

USA -

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Trade name: Bio-Plex[™] Wash Buffer

Reviewed on 12/24/2014

(Contd. of page 2)

USA

· Conditions for safe storage, including any incompatibilities

· 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.
- · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · 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.
- · Exposure controls
- · Personal protective equipment
- · General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed.
- · 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

 Information on basic physical and General Information 	chemical properties	
· Appearance:		
Form:	Liquid	
Color:	Colorless	
· Odor:	Odorless	
· Odour threshold:	Not determined.	
· pH-value at 20 °C:	7.4	
 Change in condition Melting point/Melting range: Boiling point/Boiling range: 	0 °C undetermined	
· Flash point:	Not applicable	
· Flammability (solid, gaseous)	Not applicable.	
· Ignition temperature:		
Decomposition temperature:	Not determined.	
· Auto igniting:	Product is not selfigniting.	
		(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex[™] Wash Buffer

		(Contd. of page
· Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
· Vapor pressure at 20 °C:	23 hPa	
· Density at 20 °C:	1 g/cm ³	
Relative density	Not determined.	
· Vapour density	Not determined.	
· Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
Water:	Fully miscible	
· Partition coefficient (n-octanol/wa	ater): Not determined.	
· Viscosity:		
dynamic:	Not determined.	
kinematic:	Not determined.	
· Solvent content:		
Organic solvents:	0.0 %	
Water:	98.8 %	
Solids content:	1.0 %	
· Other information	No further relevant information available.	

10 Stability and reactivity

- · Reactivity
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · Primary irritant effect:
- · on the skin: No irritant effect.
- on the eye: No irritant 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:

(Contd. on page 5)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex[™] Wash Buffer

(Contd. of page 4)

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.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Target organs: Not applicable.

12 Ecological information

· Toxicity

- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes: Generally not hazardous for water.
- 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
 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		
· UN-Number · DOT, ADR, ADN, IMDG, IATA	Void	
· UN proper shipping name · DOT, ADR, ADN, IMDG, IATA	Void	
		(Contd. on page 6)

Safety Data Sheet acc. to OSHA HCS

Page 6/7

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex[™] Wash Buffer

	(Contd. of page 5)
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA · Class	Void
 Packing group DOT, ADR, IMDG, IATA 	Void
 Environmental hazards: Marine pollutant: 	No
· Special precautions for user	Not applicable.
 Transport in bulk according to Annex II of MARPOL73/7 and the IBC Code 	8 Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	-

15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture • SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

Section 302/304 (40CFR355.30 / 40CFR355.40):

Proprietary Reagent D

· Section 313 (40CFR372.65):

Proprietary Reagent D

· TSCA (Toxic Substances Control Act):

Proprietary Reagent A

Proprietary Reagent D

7732-18-5 water

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

National regulations

· Water hazard class: Generally not hazardous for water.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

(Contd. on page 7)

USA

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Trade name: Bio-Plex[™] Wash Buffer

Reviewed on 12/24/2014

(Contd. of page 6)

USA

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 SDS: 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 · Date of preparation / last revision 01/21/2015 / -

· Abbreviations and acronyms:

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

DOT: US Department of Transportation IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

• * Data compared to the previous version altered.

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015 Reviewed on 12/24/2014 1 Identification · Product identifier · Trade name: Bio-Plex™ Detection Ab Diluent · Catalog or product number: 10014639, 9703894, 9704417, 10014651, 10014650, 9723894, 10014640 · Relevant identified uses of the substance or mixture and uses advised against No further relevant information available. · Application of the substance / the mixture Laboratory chemicals · Details of the supplier of the safety data sheet · Manufacturer/Supplier: Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547 (510)741-1000 · Information department: Technical services, customer support lsg techserv us@bio-rad.com · Emergency telephone number: 1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT. 510-741-1000 2 Hazard(s) identification Classification of the substance or mixture The product is not classified according to the Globally Harmonized System (GHS). Classification according to Directive 67/548/EEC or Directive 1999/45/EC not applicable · Information concerning particular hazards for human 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. The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information. · Label elements · GHS label elements Void · Hazard pictograms Void · Signal word Void · Hazard statements Void · Additional information: Contact with acids may cause release of toxic gases · Other hazards · Results of PBT and vPvB assessment · PBT: Not applicable. · vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures

· Description: Mixture of the substances listed below with non-hazardous additions.

(Contd. on page 2)

USA

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex[™] Detection Ab Diluent

· Listing of dangerous and non-hazardous components:

Proprietary Reagent W

7732-18-5 water

· Additional information For the wording of the listed risk phrases refer to section 15.

4 First-aid measures

- · Description of 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.
- · 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, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- Special hazards arising from the substance or mixture No further relevant information available.
- Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- Environmental precautions: 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.
- Reference to other sections
 - No dangerous substances are released.
- 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

- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage
- · Requirements to be met by storerooms and receptacles: According to product specification
- · Information about storage in one common storage facility: Not required.

(Contd. on page 3)

(Contd. of page 1)

2.5-5%

50-100%

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex[™] Detection Ab Diluent

- · Further information about storage conditions: None.
- · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · 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.
- · Exposure controls
- · Personal protective equipment
- · General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed.
- · 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 · Information on basic physical and chemical properties · General Information · Appearance: Form: Liquid Color: Colorless Odorless · Odor: · Odour threshold: Not determined. · pH-value at 20 °C: 7.4 · Change in condition Melting point/Melting range: undetermined Boiling point/Boiling range: undetermined · Flash point: Not applicable · Flammability (solid, gaseous) Not applicable. · Ignition temperature: Decomposition temperature: Not determined. · Auto igniting: Product is not selfigniting. · Danger of explosion: Product does not present an explosion hazard. · Explosion limits: Lower: Not determined.

(Contd. on page 4)

USA

(Contd. of page 2)

BIO-RAD

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 12/24/2014

Page 4/7

Trade name: Bio-Plex™ Detection Ab Diluent

		(Contd. of page 3)	
Upper:	Not determined.		
· Vapor pressure at 20 °C:	23 hPa		
· Density at 20 °C:	1 g/cm ³		
· Relative density	Not determined.		
· Vapour density	Not determined.		
 Evaporation rate 	Not determined.		
· Solubility in / Miscibility with			
Water:	Fully miscible		
· Partition coefficient (n-octanol/	ol/water): Not determined.		
· Viscosity:	<i>y</i> :		
dynamic:	Not determined.		
kinematic:	Not determined.		
· Solvent content:			
Organic solvents:	0.0 %		
Water:	93.8 %		
Solids content:	1.3 %		
 Other information 	No further relevant information available.		

10 Stability and reactivity

- · Reactivity
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritant 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.

(Contd. on page 5)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Trade name: Bio-Plex[™] Detection Ab Diluent

Reviewed on 12/24/2014

(Contd. of page 4)

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Target organs: Not applicable.

12 Ecological information

· Toxicity

- · Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional 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.

· 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** 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.

14 Transport information		
· UN-Number · DOT, ADR, ADN, IMDG, IATA	Void	
 UN proper shipping name DOT, ADR, ADN, IMDG, IATA 	Void	
· Transport hazard class(es)		
· DOT, ADR, ADN, IMDG, IATA · Class	Void	
		(Contd. on page 6)

Safety Data Sheet acc. to OSHA HCS

Page 6/7

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex[™] Detection Ab Diluent

	(Contd. of page 5)
· Packing group · DOT, ADR, IMDG, IATA	Void
Environmental hazards: Marine pollutant:	No
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MA and the IBC Code	ARPOL73/78 Not applicable.
Transport/Additional information:	Not dangerous according to the above specifications.
UN "Model Regulation":	-

15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture • SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

Section 302/304 (40CFR355.30 / 40CFR355.40):	· Section 3	
Proprietary Reagent D	Proprietary	
Section 313 (40CFR372.65):	· Section 3	
Proprietary Reagent D		
· TSCA (Toxic Substances Control Act):		
Proprietary Reagent A		
Proprietary Reagent C		
Proprietary Reagent D		
7732-18-5 water	7732-18-5	
· Carcinogenic categories		
· EPA (Environmental Protection Agency)		
None of the ingredients is listed.		
· TLV (Threshold Limit Value established by ACGIH)		

None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· National regulations

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

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

(Contd. on page 7)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 12/24/2014

Trade name: Bio-Plex[™] Detection Ab Diluent

(Contd. of page 6)

USA

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 SDS: 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 · Date of preparation / last revision 01/21/2015 / -

· Abbreviations and acronyms:

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

DOT: US Department of Transportation IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

• * Data compared to the previous version altered.

Safety Data Sheet acc. to OSHA HCS Page 1/7

Reviewed on 01/21/2015

Printing date 01/21/2015

1 Identification

- · Product identifier
- · Trade name: <u>Streptavidin-PE</u>
- · Catalog or product number: 171304501, 9704418, 9703887, 9703897, 10031861
- Relevant identified uses of the substance or mixture and uses advised against
 No further relevant information available.
- · Application of the substance / the mixture Laboratory chemicals
- · Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547

(510)741-1000

- Information department: Technical services, customer support
- Isg_techserv_us@bio-rad.com • Emergency telephone number: 1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT. 510-741-1000

2 Hazard(s) identification

· Classification of the substance or mixture

The product is not classified according to the Globally Harmonized System (GHS).

- · Classification according to Directive 67/548/EEC or Directive 1999/45/EC not applicable
- · Information concerning particular hazards for human 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.

The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.

- · Label elements
- · GHS label elements Void
- · Hazard pictograms Void
- · Signal word Void
- · Hazard statements Void
- · Additional information: Contact with acids may cause release of toxic gases
- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description:
- 7732-18-5 water

(Contd. on page 2)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Trade name: Streptavidin-PE

Reviewed on 01/21/2015

(Contd. of page 1)

50-100%

· Identification number(s):

• EC number: 231-791-2

· Chemical characterization: Mixtures

· Description: Mixture of the substances listed below with non-hazardous additions.

· Listing of dangerous and non-hazardous components:

7732-18-5 water

• Additional information For the wording of the listed risk phrases refer to section 15.

4 First-aid measures

- · Description of 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.
- · 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, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- · Environmental precautions: No special measures required.
- 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.
- · Reference to other sections
- No dangerous substances are released.
- 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

- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.

(Contd. on page 3)

- USA -



Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Trade name: Streptavidin-PE

Reviewed on 01/21/2015

(Contd. of page 2)

· Conditions for safe storage, including any incompatibilities

· 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.
- · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · 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.
- · Exposure controls
- · Personal protective equipment
- · General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed.
- · 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

Information on basic physical and	and chemical properties	
 General Information Appearance: Form: Color: Odor: Odour: Odour threshold: 	Liquid Colorless Odorless Not determined.	
· pH-value at 20 °C:	7.4	
 Change in condition Melting point/Melting range: Boiling point/Boiling range: 	0 °C undetermined	
· Flash point:	Not applicable	
· Flammability (solid, gaseous)	Not applicable.	
· Ignition temperature:		
Decomposition temperature:	Not determined.	
· Auto igniting:	Product is not selfigniting.	
		(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 01/21/2015

Trade name: Streptavidin-PE

		(Contd. of page 3
· Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
· Vapor pressure at 20 °C:	23 hPa	
Density at 20 °C:	1 g/cm ³	
Relative density	Not determined.	
· Vapour density	Not determined.	
· Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
Water:	Fully miscible	
· Partition coefficient (n-octanol/w	nol/water): Not determined.	
· Viscosity:		
dynamic:	Not determined.	
kinematic:	Not determined.	
Solvent content:		
Organic solvents:	0.0 %	
Water:	98.9 %	
· Other information	No further relevant information available.	

10 Stability and reactivity

- · Reactivity
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritant 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.

(Contd. on page 5)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Trade name: Streptavidin-PE

Reviewed on 01/21/2015

(Contd. of page 4)

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Target organs: Not applicable.

12 Ecological information

· Toxicity

- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes: Generally not hazardous for water.
- · 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

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.

UN-Number		
DOT, ADR, ADN, IMDG, IATA	Void	
UN proper shipping name DOT, ADR, ADN, IMDG, IATA	Void	
Transport hazard class(es)		
DOT, ADR, ADN, IMDG, IATA		
Class	Void	

Page 5/7

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 01/21/2015

Trade name: Streptavidin-PE

	(Contd. of page 5)
· Packing group · DOT, ADR, IMDG, IATA	Void
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user	Not applicable.
 Transport in bulk according to Annex II of MAI and the IBC Code 	RPOL73/78 Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	-

15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture • SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

Section 302/304 (40CFR355.30 / 40CFR355.40):	· Section 3
Proprietary Reagent D	Proprietary
Section 313 (40CFR372.65):	· Section 3
Proprietary Reagent D	Proprietary
TSCA (Toxic Substances Control Act):	· TSCA (Tox
Proprietary Reagent A	
Proprietary Reagent C	
Proprietary Reagent D	
7732-18-5 water	7732-18-5
Carcinogenic categories	-
EPA (Environmental Protection Agency)	•
None of the ingredients is listed.	None of the

 \cdot TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· National regulations

· Water hazard class: Generally not hazardous for water.

• Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

(Contd. on page 7)

Safety Data Sheet acc. to OSHA HCS

Printing date 01/21/2015

Reviewed on 01/21/2015

Trade name: Streptavidin-PE

(Contd. of page 6)

USA

Page 7/7

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 SDS: 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 · Date of preparation / last revision 01/21/2015 / -

· Abbreviations and acronyms:

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

DOT: US Department of Transportation IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

• * Data compared to the previous version altered.