

Kit Components

03/16/2010

Product code	Description	
1662400 1662400EDU 1662401 1662401EDU 9705983 1669080EDU	Diagnostics ELISA Kit	

Components:

1662406EDU	Chicken IGY, Lyophilized
1662407EDU	Rabbit Anti-Chicken, Lyophilized
1662408EDU	Goat anti-Rabbit HRP, Lyophilized
1610780	10X PBS (Phosphate Buffer Saline)
1610781	10% Tween 20
1662402	HRP Enzyme Substrate (TMB)

Material Safety Data Sheet

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Printing date 03/16/2010

Reviewed on 10/08/2009

1 Identification of substance:

- · Product details:
- · Trade name: Chicken IGY, Lyophilized
- · Catalog or product number: 1662406EDU, 9705933
- · Application of the substance / the preparation Laboratory chemicals
- *Manufacturer/Supplier:* Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547

(510)741-1000

· Information department: Technical services, customer support.

· Emergency information:

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 Composition/Information on components:

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

 Listing of d 	angerous and non-hazardous components:	
6138-23-4	d-trehalose	50-100%
94349-60-7	Albumins, bovine serum	5-10%
7732-18-5	water	1.0-2.5%

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

3 Hazards identification

- · Emergency overview: 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.

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

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.

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USA

BIO-RAD

Material Safety Data Sheet

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Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: Chicken IGY, Lyophilized

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5 Fire fighting measures

- Suitable extinguishing agents
- CO2, 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: Not required
- · Measures for environmental protection: Do not allow to enter sewers/ surface or ground water.
- · Measures for cleaning/collecting: Pick up mechanically.
- · 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:

26628-22-8 sodium azide

- REL () Short-term value: C 0.3** mg/m³, C 0.1* ppm *as HN3 vapor; **as NaN3; Skin TLV () Short-term value: C 0.29** mg/m³, C 0.11* ppm
 - *as HN3 vapor **as NaN3

• 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 for handling chemicals should be followed.
- · 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

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Printing date 03/16/2010

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Trade name: Chicken IGY, Lyophilized

9 Physical and chemical p	properties:
· General Information	
Form:	Solid.
Color: Odor:	Whitish Odorless
 Change in condition Melting point/Melting range Boiling point/Boiling range. 	
· Flash point:	Not applicable
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Density:	Not determined
 Solubility in / Miscibility with Water: 	Fully miscible
· Solvent content:	
Organic solvents: Water:	0.0 % 2.0 %
Solids content:	98.0 %

10 Stability and reactivity

- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Materials to be avoided:
- · 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 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.
- · Target organs: Not applicable.

(Contd. on page 4)

Material Safety Data Sheet

Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: Chicken IGY, Lyophilized

(Contd. of page 3)

12 Ecological information:

· 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.

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

- · DOT regulations:
- Hazard class:
- · Land transport ADR/RID (cross-border)
- ADR/RID class:

· Maritime transport IMDG:

· IMDG Class:

· Marine pollutant: No

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

· Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

· SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

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

None of the ingredients is listed.

· Section 313 (40CFR372.65):

None of the ingredients is listed.

• TSCA (Toxic Substances Control Act):

7732-18-5 water

7647-14-5 sodium chloride

7558-80-7 Sodium dihydrogen phosphate

26628-22-8 sodium azide

(Contd. on page 5)

Material Safety Data Sheet

Reviewed on 10/08/2009

Trade name: Chicken IGY, Lyophilized

Printing date 03/16/2010

A4

USA

· Carcinogenic categories	
· EPA (Environmental Protection Agen	cy)

None of the ingredients is listed.

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)

26628-22-8 sodium azide

· 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.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· 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

• 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 · * Data compared to the previous version altered.

BIO-RAD

Material Safety Data Sheet

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Printing date 03/16/2010

Reviewed on 10/08/2009

1 Identification of substance:

- · Product details:
- · Trade name: <u>Rabbit Anti-Chicken, Lyophilized</u>
- · Catalog or product number: 1662407EDU, 9705934
- · Application of the substance / the preparation Laboratory chemicals
- *Manufacturer/Supplier:* Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547

(510)741-1000

· Information department: Technical services, customer support.

· Emergency information:

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 Composition/Information on components:

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

 Listing of d 	angerous and non-hazardous components:		
6138-23-4	d-trehalose		50-100%
94349-60-7	Albumins, bovine serum		5-10%
7732-18-5	water		1.0-2.5%
7647-14-5	sodium chloride	Xi; R 36/38	1.0-2.5%
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· Additional information For the wording of the listed risk phrases refer to section 15.

3 Hazards identification

- · Emergency overview: 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.

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

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.

(Contd. on page 2)

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Reviewed on 10/08/2009

Trade name: Rabbit Anti-Chicken, Lyophilized

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5 Fire fighting measures

- · Suitable extinguishing agents
- CO2, 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: Not required
- · Measures for environmental protection: Do not allow to enter sewers/ surface or ground water.
- · Measures for cleaning/collecting: Pick up mechanically.
- · 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:

26628-22-8 sodium azide

- REL () Short-term value: C 0.3** mg/m³, C 0.1* ppm *as HN3 vapor; **as NaN3; Skin TLV () Short-term value: C 0.29** mg/m³, C 0.11* ppm
 - *as HN3 vapor **as NaN3

 \cdot 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 for handling chemicals should be followed.
- · 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

BIO RAD

Material Safety Data Sheet

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Trade name: Rabbit Anti-Chicken, Lyophilized

(Contd. of page 2)

General Information	
Form:	Solid.
Color:	Whitish
Odor:	Odorless
Change in condition Melting point/Melting rai Boiling point/Boiling rar	
Flash point:	Not applicable
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Density:	Not determined
Solubility in / Miscibility w	vith
Water:	Fully miscible
Solvent content:	
Organic solvents:	0.0 %
Water:	2.0 %
Solids content:	98.0 %

10 Stability and reactivity

- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Materials to be avoided:
- · 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 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.
- · Target organs: Not applicable.

(Contd. on page 4)

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Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: Rabbit Anti-Chicken, Lyophilized

(Contd. of page 3)

12 Ecological information:

· 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.

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

- · DOT regulations:
- Hazard class:
- · Land transport ADR/RID (cross-border)
- ADR/RID class:

· Maritime transport IMDG:

· IMDG Class:

· Marine pollutant: No

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

· Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

· SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

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

None of the ingredients is listed.

• Section 313 (40CFR372.65):

None of the ingredients is listed.

• TSCA (Toxic Substances Control Act):

7732-18-5 water

7647-14-5 sodium chloride

7778-53-2 Potassium Phosphate, Potassium Phosphate tribasic

7558-80-7 Sodium dihydrogen phosphate

(Contd. on page 5)

USA

Material Safety Data Sheet

Reviewed on 10/08/2009

Trade name: Rabbit Anti-Chicken, Lyophilized

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A4

USA

· Carcinogenic categories
· EPA (Environmental Protection Agency)

None of the ingredients is listed.

Printing date 03/16/2010

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

 \cdot TLV (Threshold Limit Value established by ACGIH)

26628-22-8 sodium azide

· 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.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· 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

• 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 · * Data compared to the previous version altered.

BIO-RAD

Material Safety Data Sheet

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(510)741-1000

Printing date 03/16/2010

Reviewed on 10/08/2009

1 Identification of substance:

· Product details:

- · Trade name: Goat anti-Rabbit HRP, Lyophilized
- · Catalog or product number: 1662408EDU, 9705936
- · Application of the substance / the preparation Laboratory chemicals
- *Manufacturer/Supplier:* Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547

· Information department: Technical services, customer support.

· Emergency information:

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 Composition/Information on components:

· Chemical characterization

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

Listing of dargerous and non-hazardous components: 50-100% 6138-23-4 d-trehalose 50-100% 94349-60-7 Albumins, bovine serum 5-10% Goat anti-rabbit IgG(H+L) horseradish Peroxidase conjugate 1.0-2.5% 7732-18-5 water 1.0-2.5% 7647-14-5 sodium chloride 1.0-2.5% 54-64-8 Thiomersal 0.01-0.1%

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

3 Hazards identification

- · Emergency overview: 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.

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

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.

(Contd. on page 2)

- USA -

Material Safety Data Sheet

Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: Goat anti-Rabbit HRP, Lyophilized

(Contd. of page 1)

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

6 Accidental release measures

- · Person-related safety precautions: Not required
- Measures for environmental protection: Do not allow to enter sewers/ surface or ground water.
- · Measures for cleaning/collecting: Pick up mechanically.
- · 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:

54-64-8	8 Thiomersal
REL ()	Short-term value: C 0.1 mg/m ³
TLV ()	0.1 mg/m ³
v	Skin; BEI
· Additio	conal 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 for handling chemicals should be followed.
- · 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

(Contd. on page 3)

LISA

BIGHTAD

Material Safety Data Sheet

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Printing date 03/16/2010

Reviewed on 10/08/2009

(Contd. of page 2)

Trade name: Goat anti-Rabbit HRP, Lyophilized

General Information	
Form:	Solid.
Color:	Whitish
Odor:	Odorless
Change in condition Melting point/Melting range Boiling point/Boiling range:	: undetermined undetermined
Flash point:	Not applicable
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Density:	Not determined
Solubility in / Miscibility with Water:	Fully miscible
Solvent content:	
Organic solvents:	0.0 %
Water:	2.0 %
Solids content:	98.0 %

10 Stability and reactivity

- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Materials to be avoided:
- · 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 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.
- · Target organs: Not applicable.

(Contd. on page 4)

Material Safety Data Sheet

Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: Goat anti-Rabbit HRP, Lyophilized

(Contd. of page 3)

12 Ecological information:

· 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.

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

- · DOT regulations:
- Hazard class:
- · Land transport ADR/RID (cross-border)
- ADR/RID class:
- · Maritime transport IMDG:
- · IMDG Class:
- · Marine pollutant: No
- Air transport ICAO-TI and IATA-DGR: • ICAO/IATA Class: -

· Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

· SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

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

None of the ingredients is listed.

- Section 313 (40CFR372.65):
- None of the ingredients is listed.
- · TSCA (Toxic Substances Control Act):

7732-18-5 water

7647-14-5 sodium chloride

7558-80-7 Sodium dihydrogen phosphate

54-64-8 Thiomersal

(Contd. on page 5)

Material Safety Data Sheet

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Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: Goat anti-Rabbit HRP, Lyophilized

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USA

· Carcinogenic categories
· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

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.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· 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

· 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 · * Data compared to the previous version altered.

Material Safety Data Sheet

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Printing date 03/16/2010

Reviewed on 10/08/2009

1 Identification of substance:

· Product details:

· Trade name: 10X PBS (Phosphate Buffer Saline)

Catalog or product number: 1610780, 9705962, 1662403, 1662403EDU, 9703380, 1610780EDU, 1610780XTU
 Application of the substance / the preparation Laboratory chemicals

 Manufacturer/Supplier: Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547

(510)741-1000

· Information department: Technical services, customer support.

· Emergency information:

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 Composition/Information on components:

· Chemical characterization

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

· Listing of dangerous and non-hazardous components:			
7732-18-5	water		50-100%
7647-14-5	sodium chloride	Xi; R 36/38	5-10%
7558-80-7	Sodium dihydrogen phosphate	Xn; R 20/21/22	1.0-2.5%

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

3 Hazards identification

- · Emergency overview: 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.

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

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.

(Contd. on page 2)

USA

Material Safety Data Sheet

Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: 10X PBS (Phosphate Buffer Saline)

(Contd. of page 1)

5 Fire fighting measures

- Suitable extinguishing agents
 - CO2, 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: 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:
- 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 for handling chemicals should be followed.
- · Breathing equipment: Not required.
- · Protection of hands: Protective gloves.
- · Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. 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.

Material Safety Data Sheet

Reviewed on 10/08/2009

Trade name: 10X PBS (Phosphate Buffer Saline)

· Eye protection: Safety glasses

General Information		
Form:	liquid	
Color:	Clear	
Odor:	Odorless	
Change in condition		
Melting point/Melting rang		
Boiling point/Boiling rang	<i>e:</i> 100°C	
Flash point:	Not applicable	
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard.	
Vapor pressure at 20°C:	23 hPa	
Density:	Not determined	
Solubility in / Miscibility with	h	
Water:	Fully miscible	
pH-value at 20°C:	7.4	
Solvent content:		
Organic solvents:	0.0 %	
Water:	90.1 %	
Solids content:	9.9 %	

10 Stability and reactivity

- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Materials to be avoided:
- · 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 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 4) USA

Printing date 03/16/2010

(Contd. of page 2)

Material Safety Data Sheet

Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: 10X PBS (Phosphate Buffer Saline)

(Contd. of page 3)

· Target organs: Not applicable.

12 Ecological information:

· Additional ecological information:

· General notes: Generally not hazardous for water.

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

- · DOT regulations:
- Hazard class:
- · Land transport ADR/RID (cross-border)
- ADR/RID class:

· Maritime transport IMDG:

· IMDG Class:

· Marine pollutant: No

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

· Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

· SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

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

None of the ingredients is listed.

· Section 313 (40CFR372.65):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

(Contd. on page 5)

USA

Material Safety Data Sheet

(Contd. of page 4)

USA

Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: 10X PBS (Phosphate Buffer Saline)

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

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.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· 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

· 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 · * Data compared to the previous version altered.

Material Safety Data Sheet

Printing date 03/16/2010

Reviewed on 10/08/2009

1 Identification of substance:

· Product details:

- · Trade name: 10% Tween 20
- · Catalog or product number: 1610781, 1662404, 9705961, 1662404EDU, 1610781EDU
- Application of the substance / the preparation Laboratory chemicals
- Manufacturer/Supplier: Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547

(510)741-1000

· Information department: Technical services, customer support.

· Emergency information:

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 Composition/Information on components:

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

 Listing of 	dangerous and non-hazardous components:		
7732-18-5	water	50-100%	
9005-64-5	Tween 20	5-10%	

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

3 Hazards identification

- · Emergency overview: 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.

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

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.
- \cdot After swallowing Induce vomiting and call for medical help.

5 Fire fighting measures

• Suitable extinguishing agents Use fire fighting measures that suit the environment.

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Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: 10% Tween 20

(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 for handling chemicals should be followed.
- · Breathing equipment: Not required.
- · Protection of hands: Protective gloves.
- · Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. 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

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USA

Material Safety Data Sheet

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Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: 10% Tween 20

(Contd. of page 2)

General Information	
Form:	liquid
Color:	Clear
Odor:	Odorless
Change in condition Melting point/Melting rang	ge: undetermined
Boiling point/Boiling rang	e: 100°C
Flash point:	> 100°C
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Vapor pressure at 20°C:	23 hPa
Density at 20°C:	1.01 g/cm ³
Solubility in / Miscibility with Water:	h Fully miscible
Solvent content:	
Organic solvents:	0.0 %
Water:	90.0 %

10 Stability and reactivity

- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Materials to be avoided:
- · 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 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.
- · Target organs: Not applicable.

(Contd. on page 4)

Material Safety Data Sheet

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Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: 10% Tween 20

(Contd. of page 3)

12 Ecological information:

· 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.

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

- · DOT regulations:
- Hazard class:
- · Land transport ADR/RID (cross-border)
- ADR/RID class:
- · Maritime transport IMDG:
- · IMDG Class:
- · Marine pollutant: No
- Air transport ICAO-TI and IATA-DGR: • ICAO/IATA Class: -

· Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

· SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

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

- None of the ingredients is listed.
- · Section 313 (40CFR372.65):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

- · Carcinogenic categories
- · EPA (Environmental Protection Agency)

None of the ingredients is listed.

- · IARC (International Agency for Research on Cancer)
- None of the ingredients is listed.

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BIO RAD

Material Safety Data Sheet

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Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: 10% Tween 20

· NTP (National Toxicology Program)

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.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

• 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

· 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 · * Data compared to the previous version altered.

Material Safety Data Sheet

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(510)741-1000

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Printing date 03/16/2010

Reviewed on 10/08/2009

1 Identification of substance:

· Product details:

- · Trade name: <u>HRP Enzyme Substrate (TMB)</u>
- · Catalog or product number: 1662402, 9705937, 1662402EDU
- · Application of the substance / the preparation Laboratory chemicals
- *Manufacturer/Supplier:* Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547
- · Information department: Technical services, customer support.
- · Emergency information:

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 Composition/Information on components:

- · 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 15.
- · Chemical characterization
- · Listing of dangerous and non-hazardous components:

Substance B

3 Hazards identification

- · Emergency overview: not applicable
- · Information pertaining to particular dangers for man and environment not applicable
- · Classification system

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

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 Use fire fighting measures that suit the environment.

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Reviewed on 10/08/2009

Trade name: HRP Enzyme Substrate (TMB)

Printing date 03/16/2010

· 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: 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 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

General Information	1	
Form:	liquid	
Color:	Colorless	
Odor:	Odorless	

(Contd. of page 1)

Material Safety Data Sheet

Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: HRP Enzyme Substrate (TMB)

		(Contd. of page
Change in condition Melting point/Melting ran Boiling point/Boiling ran		
Flash point:	> 100°C	
Danger of explosion:	Product does not present an explosion hazard.	
Vapor pressure at 20°C:	23 hPa	
Density at 20°C:	1 g/cm ³	
Solubility in / Miscibility wi	th	
Water:	Fully miscible	
Organic solvents:	0.0 %	
Water:	98.1 %	
Solids content:	0.5 %	

10 Stability and reactivity

• Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

- · Materials to be avoided:
- · 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 irritant 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.

· Target organs: Not applicable.

12 Ecological information:

· 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.

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Printing date 03/16/2010

Reviewed on 10/08/2009

Trade name: HRP Enzyme Substrate (TMB)

(Contd. of page 3)

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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

- · DOT regulations:
- Hazard class:
- · Land transport ADR/RID (cross-border)
- ADR/RID class:
- · Maritime transport IMDG:
- · IMDG Class:
- · Marine pollutant: No
- · Air transport ICAO-TI and IATA-DGR:
- · ICAO/IATA Class: -
- · Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

· SARA (Superfund Amendents and Reauthorization Act of 1986 - USA)

- · Carcinogenic categories
- · EPA (Environmental Protection Agency)

Substance is not listed.

- · IARC (International Agency for Research on Cancer)
- Substance A
- · NTP (National Toxicology Program)
- Substance is not listed.
- · TLV (Threshold Limit Value established by ACGIH)
- Substance A
- · MAK (German Maximum Workplace Concentration)
- Substance is not listed.

(Contd. on page 5)

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A3

Material Safety Data Sheet

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(Contd. of page 4)

Trade name: HRP Enzyme Substrate (TMB)

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

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

· 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:

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

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