

Product code	Description
1660003	Bacterial Transformation Kit
1660003EDU	
Components:	
9702998	TE Buffer
9702925	Transformation Solution
1660421	LB Broth
1660407	Ampicillin, lyophilized
1660600	LB Nutrient Agar Powder
1660405	Plasmid (pGLO™) lyophilized
1660408	E. coli HB101 lyophilized

1 Identification

Product identifier
TE BUFFER

- Trade name: TE Buffer
- Catalog or product number: 9702998
- 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
- 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

(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).
- 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
- 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

50-100%
(Contd. on page 2)

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MAINTENANCE DEPT.

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

4 First-aid measures

- Description of first aid measures: No special measures required.
- 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.
- Information for doctor:
- Most important symptoms and effects: both acute and delayed. No further relevant information available.
- Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents: CO₂, 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).
- 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

- Handling
- 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.
- 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: Liquid
- Form: Colorless
- Color: Odorless
- Odor: Odorless
- Odour threshold: Not determined.
- pH-value: Not determined.
- Change in condition
- Melting point/Melting range: 0 °C
- Boiling point/Boiling range: undetermined
- Flash point: Not applicable
- Flammability (solid, gaseous): Not applicable.
- Ignition temperature: Not determined.
- Decomposition temperature: Not determined.
- Auto igniting: Product is not selfigniting.
- Danger of explosion: Product does not present an explosion hazard.
- Explosion limits: Not determined.
- Lower: Not determined.
- Upper: Not determined.

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: **TE Buffer**

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: **TE Buffer**

(Contd. of page 3)	
· 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/water):	Not determined.
· Viscosity: dynamic; kinematic:	Not determined. Not determined.
· Solvent content: Organic solvents: Water:	0.0 % 99.8 %
· Solids content: Other information	0.2 % 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.
- Carcinogenic categories
 - IARC (International Agency for Research on Cancer)
 - None of the ingredients is listed.

(Contd. on page 5)

US

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: **TE Buffer**

(Contd. of page 4)	
· 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.
- Behavior in environmental systems:
- 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	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	Void
· DOT, ADR, IMDG, IATA	Void

(Contd. on page 6)

US

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: TE Buffer

(Contd. of page 5)

· Environmental hazards:	No
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	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 Amendments 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.
	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.

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:

(Contd. on page 7)
us

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: TE Buffer

(Contd. of page 6)

- 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 06/10/2015 / -
- 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)
 - MDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - ATA: International Air Transport Association
 - NIH: North American Conference of Governmental Industrial Hygienists
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
- * Data compared to the previous version altered.

us

1 Identification

- Product identifier
- Trade name: Transformation Solution
- Catalog or product number: 9702925
- 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
- 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

TRANSFORMATION SOLUTION

2 Hazard(s) identification

- Classification of the substance or mixture
The product is not classified according to the Globally Harmonized System (GHS).
- 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
- 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:

7774-34-7 calcium chloride	1.0-2.5%
7732-18-5 water	50-100%

(Contd. on page 2) US

Trade name: Transformation Solution

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

(Contd. of page 1)

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.
- Information for doctor
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents
CO₂, 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).
- 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

- Handling
- 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.
- Further information about storage conditions: None.

(Contd. on page 3) US

Trade name: Transformation Solution

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

(Contd. of page 2)

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: Liquid
- Form: Colorless
- Color: Odorless
- Odor: Odorless
- Odour threshold: Not determined
- pH-value at 20 °C: 6
- Change in condition
- Melting point/Melting range: 0 °C
- Boiling point/Boiling range: undetermined
- Flash point: Not applicable
- Flammability (solid, gaseous) Not applicable.
- Ignition temperature:
- Decomposition temperature: Not determined.
- Auto lighting: Product is not selfigniting.
- Danger of explosion: Product does not present an explosion hazard.
- Explosion limits:
 - Lower: Not determined.
 - Upper: Not determined.

(Contd. on page 4)

Trade name: Transformation Solution

(Contd. of page 3)

Vapor pressure at 20 °C:	23 hPa
Density at 20 °C:	1,00459 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/water):	Not determined.
Viscosity: dynamic: kinematic:	Not determined. Not determined.
Solvent content: Organic solvents: Water:	0,0 % 98,9 %
Solids content:	1,1 %
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.
- Carcinogenic categories
- IARC (International Agency for Research on Cancer) None of the ingredients is listed.

(Contd. on page 5)

Trade name: Transformation Solution

(Contd. of page 4)	
· 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.
- Behavior in environmental systems:
- 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	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	Void
· DOT, ADR, IMDG, IATA	Void

Trade name: Transformation Solution

(Contd. of page 5)	
· Environmental hazards:	No
· Marine pollutant:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	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 Amendments 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
- 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.

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:



Safety Data Sheet
acc. to OSHA HCS

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: Transformation Solution

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547. (510) 744-1000 (Contd. of page 6)

Date of preparation / last revision 06/10/2015 / -

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
ATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (Division of the American Chemical Society)

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

US



Safety Data Sheet
acc. to OSHA HCS

Printing date 06/10/2015

Reviewed on 06/10/2015

1 Identification

Product identifier

Trade name: LB Broth

Catalog or product number: 1660421, 1660421EDU, 9702927

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
tsq_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).

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

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	56-100%
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(Contd. on page 2)

US

Trade name: **LB Broth**

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

(Contd. of page 1)

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.
- Information for doctor
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents
- CO₂, 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).
- 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

- Handling
- 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.
- Further information about storage conditions: None.

(Contd. on page 3)

US

Trade name: **LB Broth**

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

(Contd. of page 2)

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 or 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:	Liquid
Form:	Colorless
Color:	Odorless
Odor:	Not determined.
Odour threshold:	Not determined.
pH-value:	0 °C
Change in condition	undetermined
Melting point/Softening range:	Not applicable
Boiling point/Boiling range:	Not applicable.
Flash point:	Not applicable.
Flammability (solid, gaseous)	Not applicable.
Ignition temperature:	Not determined.
Decomposition temperature:	Product is not selfigniting.
Auto igniting:	Product does not present an explosion hazard.
Danger of explosion:	Not determined
Explosion limits:	Not determined.
Lower:	
Upper:	

(Contd. on page 4)

US

Trade name: LB Broth

Vapor pressure at 20 °C:	23 hPa
Density:	Not determined
Relative density:	Not determined.
Vapour density:	Not determined.
Evaporation rate:	Not determined.
Solubility in / Miscibility with Water:	Fully miscible
Partition coefficient (n-octanol/water):	Not determined.
Viscosity: dynamic:	Not determined.
kinematic:	Not determined.
Solvent content:	
Organic solvents:	0,0 %
Water:	98,0 %
Solids content:	2,0 %
Other information:	No further relevant information available.

(Contd. of page 3)

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.

Carcinogenic categories

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

(Contd. on page 5)
US

Trade name: LB Broth

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.

(Contd. of page 4)

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
- 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 packaging:
- Recommendation: Disposal must be made according to official regulations.
- Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

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

(Contd. on page 6)
US

Trade name: **LB Broth**

· Environmental hazards:	No
· Marine pollutant:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	

(Contd. of page 5)

15 Regulatory information

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

- SARA (Superfund Amendments 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.
- 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.

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:

(Contd. on page 7) US

Trade name: **LB Broth**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547; 1(510) 747-1000 (Contd. of page 6)

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

- Date of preparation / last revision 06/10/2015 / -
- 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
ATA: 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.

US

BIO-PAD**Safety Data Sheet**
acc. to OSHA HCS

Page 1/7

Printing date 06/10/2015

Reviewed on 06/10/2015

1 Identification

- Product identifier
- Trade name: Ampicillin, lyophilized
- Catalog or product number: 1660407, 1660407EDU, 9702928, 10040541
- CAS Number: 69-52-3
- EC number: 200-708-1
- 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 Alford Nobel Drive
Hercules, California 94547
(510)741-1000
- Information department:
Technical services, customer support
lsg_technserv_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
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.
- Label elements
- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms
- GHS07
- Signal word Warning
- Hazard-determining components of labeling:
sodium [2S-[2alpha,5alpha,6(S)]]-6-(aminophenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate
- Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
- Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapors/spray

(Contd. on page 2)

US

BIO-PAD**Safety Data Sheet**
acc. to OSHA HCS

Page 2/7

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: Ampicillin, lyophilized

- P280 Wear protective gloves.
- P280 Wear eye protection /face protection.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- 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.

(Contd. of page 1)

3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description:
69-52-3 sodium [2S-[2alpha,5alpha,6(S)]]-6-(aminophenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate
- Identification number(s):
- EC number: 200-708-1
- Additional information: For the wording of the listed risk phrases refer to section 15.

4 First-aid measures

- Description of first aid measures
- After Inhalation Supply fresh air; consult doctor in case of complaints.
- After eye contact Rinse opened eye for several minutes under running water.
- After swallowing Induce vomiting and call for medical help.
- Information for doctor
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents
CO2, 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: Pick up mechanically.

(Contd. on page 3)

US

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: Ampicillin, lyophilized

(Contd. of page 2)

- Reference to other sections
- See Section 7 for information on safe handling
- See Section 8 for information on personal protection equipment
- See Section 13 for disposal information.

7 Handling and storage

- Handling
- Precautions for safe handling 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.
- 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: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment
- General protective and hygienic measures Wash hands before breaks and at the end of work.
- 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: Crystalline
- Form: Light yellow
- Color: Odorless
- Odor: Not determined.
- Odour threshold: Not applicable.
- pH-value: 240 °C
- Change in condition
- Melting point/Melting range:

(Contd. on page 4)

US

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: Ampicillin, lyophilized

(Contd. of page 3)

· Boiling point/Boiling range:	undetermined
· Flash point:	Not applicable
· Flammability (solid, gaseous)	Product is not flammable.
· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Auto igniting:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water:	Fully miscible
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
· Organic solvents:	0.0 %
· Solids content:	100.0 %
· 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; Irritant to skin and mucous membranes.
- on the eye: Irritant effect.

(Contd. on page 5)

US

Trade name: Ampicillin, lyophilized

(Contd. of page 4)

· Sensitization: No sensitizing effects known.
· Additional toxicological information:
· Carcinogenic categories
· IARC (International Agency for Research on Cancer) Substance is not listed.
· NTP (National Toxicology Program) Substance is not listed.
· OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
- 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	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· DOT, ADR, ADN, IMDG, IATA	Void

(Contd. on page 6)

US

Trade name: Ampicillin, lyophilized

(Contd. of page 5)

· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	Void
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	No
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)
- Section 302/304 (40CFR355.30 / 40CFR355.40):
Substance not listed.
- Section 313 (40CFR372.65):
Substance is not listed.
- TSCA (Toxic Substances Control Act):
Substance is not listed.

Carcinogenic categories

· EPA (Environmental Protection Agency) Substance is not listed.
· TLV (Threshold Limit Value established by ACGIH) Substance is not listed.
· MAK (German Maximum Workplace Concentration) Substance is not listed.
· NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.

National regulations

- Water hazard class: Generally not hazardous for water.
- 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.

(Contd. on page 7)

US

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: Ampicillin, lyophilized

(Contd. of page 6)

- 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 06/10/2015 / -
- Abbreviations and acronyms:
 - ADP: Accord européen relatif au 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 Transport Association
 - IATA: International Air Transport Association
 - ACGIH: American Conference of Governmental Industrial Hygienists
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
 - Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
 - STO / SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
- * Data compared to the previous version altered.

Printing date 06/10/2015

Reviewed on 06/10/2015

1 Identification

- Product identifier
- Trade name: **LB Nutrient Agar Powder**
- Catalog or product number: **LB NUTRIENT AGAR POWDER**
- 1660600, 1660403, 1660403EDU, 1660800EDU, 9702926, 1660472, 1660472EDU, 9704355, 10040672
- 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
- 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
 - Skin Irrit. 2 H315 Causes skin irritation.
 - Eye Irrit. 2A H319 Causes serious eye irritation.
- Label elements
- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms



GHS07

- Signal word Warning
- Hazard statements
 - H315 Causes skin irritation.
 - H319 Causes serious eye irritation.
- Precautionary statements
 - P280 Wear eye protection / face protection.
 - P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P362 Take off contaminated clothing and wash before reuse.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- Additional information: Contact with acids may cause release of toxic gases

(Contd. on page 2)

US

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: LB Nutrient Agar Powder

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

(Contd. of page 1)

3 Composition/information on ingredients

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

· Listing of dangerous and non-hazardous components:	
9002-18-01 Agar	35-50%
73049-73-7 Tryptone	20-35%
7647-14-5 sodium chloride	20-35%
8013-01-2 Yeast Extract	10-20%
77-86-1 Tri(hydroxymethyl)aminomethane	0.1-1.0%

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

4 First-aid measures

- Description of first aid measures
- After inhalation Supply fresh air, consult doctor in case of complaints.
- After eye contact Rinse opened eye for several minutes under running water.
- After swallowing Induce vomiting and call for medical help.
- Information for doctor
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents
CO₂, 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: Pick up mechanically.
- Reference to other sections
- See Section 7 for information on safe handling
- See Section 8 for information on personal protection equipment.

(Contd. on page 3)

Printing date 06/10/2015

Reviewed on 06/10/2015

Trade name: LB Nutrient Agar Powder

See Section 13 for disposal information.

(Contd. of page 2)

7 Handling and storage

- Handling
- 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.
- 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 Wash hands before breaks and at the end of work.
- 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: Solid
- Form: White
- Color: White
- Odor: Odorless
- Odour threshold: Not determined.
- pH-value: Not applicable.
- Change in condition
- Melting point/Melting range: undetermined
- Boiling point/Boiling range: undetermined

(Contd. on page 4)

Trade name: LB Nutrient Agar Powder

(Cont'd. of page 3)

· Flash point:	Not applicable
· Flammability (solid, gaseous)	Not determined.
· Ignition temperature:	Not determined.
· Decomposition temperature:	Product is not selfigniting.
· Auto Igniting:	Product does not present an explosion hazard.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits: Lower: Upper:	Not determined. Not determined.
· Vapor pressure:	Not applicable.
· Density: Relative density Vapour density Evaporation rate	Not determined Not determined. Not applicable. Not applicable.
· Solubility in / Miscibility with Water:	Fully miscible
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity: dynamic: kinematic:	Not applicable. Not applicable.
· Solvent content: Organic solvents:	0.0 %
· Solids content: Other information	100.0 % 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

(Cont'd. on page 5)

US

Trade name: LB Nutrient Agar Powder

(Cont'd. of page 4)

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- LD/LC50 values for hazardous components per OSHA criteria:
- 8002-18-0 Agar
- Oral LD50 11000 mg/kg (rat)
- Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritant effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
- 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.

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- 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
- Can be disposed of with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.
- Hand over to hazardous waste disposers.
- Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Cont'd. on page 6)

US

Trade name: LB Nutrient Agar Powder

(Contd. of page 5)

- Uncleaned packagings:
- Recommendation: Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information

· UN-Number	· DOT, ADR, IMDG, IATA	Void
· UN proper shipping name	· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	· DOT, ADR, ADN, IMDG, IATA	Void
· 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 MARPOL73/78 and the IBC Code		Not applicable.
· UN "Model Regulation":		

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- SARA (Superfund Amendments 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.
- TLV (Threshold Limit Value established by ACGIH)
 - None of the ingredients is listed.
- MAK (German Maximum Workplace Concentration)
 - None of the ingredients is listed.

(Contd. on page 7)
 US

Trade name: LB Nutrient Agar Powder

(Contd. of page 6)

- 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.

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: (1510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: (1510) 724-7000

- Date of preparation / last revision 06/10/2015 / -
- 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)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - Exp. limit: Skin corrosion/irritation, Hazard Category 2
 - Exp. limit: 2A: Serious eye damage/eye irritation, Hazard Category 2A
- Data compared to the previous version altered.



1 Identification

- Product identifier
- Trade name: Plasmid (pGLO™) lyophilized
- Catalog or product number: 1660405, 1660405EDU, 9703031
- CAS Number: 100209-25-4
- 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
- Information department:
Technical services, customer support
lsq_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 substance is not classified according to the Globally Harmonized System (GHS).
- 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:
100209-25-4 Plasmid DNA, Col EI
- 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.



Trade name: Plasmid (pGLO™) lyophilized

(Contd. of page 1)

- 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.
- Information for doctor
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents
CO2, 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: Pick up mechanically.
- 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

- Handling
- 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.
- 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: Not required.
- Additional information: The lists that were valid during the creation were used as basis.

Trade name: Plasmid (pGLO™) lyophilized

(Contd. of page 2)

- **Exposure controls**
- **Personal protective and hygienic equipment**
- **General protective and hygienic measures** The usual precautionary measures for handling chemicals should be followed.
- **Protection of hands:** Protective gloves.
- **Material on 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:	Solid
· Form:	Colorless
· Color:	Odorless
· Odor:	Not determined.
· Odour threshold:	Not applicable.
· pH-value:	Not applicable.
· Change in condition	
· Melting point/melting range:	undetermined
· Boiling point/boiling range:	undetermined
· Flash point:	Not applicable
· Flammability (solid, gaseous)	Product is not flammable.
· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Auto igniting:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
· Water:	Fully miscible
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
· dynamic:	Not applicable.
· Kinematic:	Not applicable.

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US

Trade name: Plasmid (pGLO™) lyophilized

(Contd. of page 3)

· Organic solvents:	0,0 %
· Salts content:	100,0 %
· 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:**
- **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.**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)**
- **Substance is not listed.**
- **NTP (National Toxicology Program)**
- **Substance is not listed.**
- **OSHA-Ca (Occupational Safety & Health Administration)**
- **Substance is not listed.**
- **Target organs:** Not applicable.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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US

Trade name: Plasmid (pGLO™) lyophilized

(Contd. of page 4)

- **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
· Transport hazard class(es)	· DOT, ADR, ADN, IMDG, IATA	Void
· Class		Void
· Packing group	· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:		No
· Marine pollutant:		Not applicable.
· Special precautions for user		Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code		Not applicable.
· Transport/Additional information:		Not dangerous according to the above specifications.
· UN "Model Regulation":		

(Contd. on page 6)

US

Trade name: Plasmid (pGLO™) lyophilized

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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**
- **Section 302/304 (40CFR355.30 / 40CFR355.40):**
Substance not listed.
- **Section 313 (40CFR372.65):**
Substance is not listed.
- **TSCA (Toxic Substances Control Act):**
Substance is not listed.
- **Carcinogenic categories**
- **EPA (Environmental Protection Agency)**
Substance is not listed.
- **TLV (Threshold Limit Value established by ACGIH)**
Substance is not listed.
- **MAK (German Maximum Workplace Concentration)**
Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)**
Substance is not listed.
- **National regulations**
- **Water hazard class:** Generally not hazardous for water.
- **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 06/10/2015 / -**
- **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
CAS: Chemical Abstracts Service (division of the American Chemical Society)
- *** Data compared to the previous version altered.**

US

BIO-RAD

Safety Data Sheet
acc. to OSHA HCS

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1 Identification

- Product identifier
- Trade name: **E. coli HB101 lyophilized**
- Catalog or product number: 1660409, 1660408EDU, 9702924, 10040678, 10040671
- 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
hsq_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
Acute Tox. 4 H302 Harmful if swallowed.
- Label elements
- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms



GHS07

- Signal word **Warning**
- Hazard-determining components of labeling:
escherichia coli bacteria - freeze dried
- Hazard statements
H302 Harmful if swallowed.
- Precautionary statements
P264 Wash thoroughly after handling
P270 Do not eat, drink or smoke when using this product.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P330 Rinse mouth.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- Additional information: Contact with acids may cause release of toxic gases
- Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.

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Trade name: **E. coli HB101 lyophilized**

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- vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description:
escherichia coli bacteria - freeze dried
- Additional information: For the wording of the listed risk phrases refer to section 15.

4 First-aid measures

- Description of first aid measures
- After inhalation Supply fresh air, consult doctor in case of complaints.
- After skin contact Generally the product does not irritate the skin.
- After eye contact Rinse opened eye for several minutes under running water.
- After swallowing Induce vomiting and call for medical help.
- Information for doctor
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents
CO2, 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: Pick up mechanically.
- Reference to other sections
- See Section 7 for information on safe handling
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7 Handling and storage

- Handling
- Precautions for safe handling No special precautions are necessary if used correctly.
- Information about protection against explosions and fires: No special measures required.

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US

Trade name: **E. coli HB101 lyophilized**

(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: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment
- General protective and hygienic measures Wash hands before breaks and at the end of work.
- 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: Solid in various forms
Light yellow
- Color: Odorless
- Odor: Not determined.
- Odour threshold: Not applicable.
- pH-value:
- Change in condition
- Melting point/Freezing range: undetermined
- Boiling point/Boiling range: undetermined
- Flash point: Not applicable
- Flammability (solid, gaseous) Product is not flammable.
- Ignition temperature:
- Decomposition temperature: Not determined.
- Auto igniting: Not determined.
- Danger of explosion: Product does not present an explosion hazard.

(Contd. on page 4)

US

Trade name: **E. coli HB101 lyophilized**

(Contd. of page 3)

- Explosion limits: Not determined.
Lower: Not determined.
Upper:
- Vapor pressure: Not applicable.
- Density: Not determined.
- Relative density: Not determined.
- Vapour density: Not applicable.
- Evaporation rate: Not applicable.
- Solubility in / Miscibility with Water: Fully miscible
- Partition coefficient (n-octanol/water): Not determined.
- Viscosity: dynamic: Not applicable.
kinematic: Not applicable.
Organic solvents: 0.0 %
- Solids content: 100.0 %
- 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:
- Carcinogenic categories
- IARC (International Agency for Research on Cancer)
Substance is not listed.
- NTP (National Toxicology Program)
Substance is not listed.

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Trade name: **E. coli HB101 lyophilized**

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· **OSHA-Ca (Occupational Safety & Health Administration)**
 Substance is not listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Behavior in environmental systems:**
- **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.
- **Unleached packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· UN-Number	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	Void
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	No
· Marine pollutant:	No

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Trade name: **E. coli HB101 lyophilized**

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· **Special precautions for user** Not applicable.
 · **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.
 · **UN "Model Regulation"**

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **SARA (Supertund Amendments and Reauthorization Act of 1986 - USA)**
- **Section 302/304 (40CFR355.30 / 40CFR355.40):**
 Substance not listed.
- **Section 313 (40CFR372.65):**
 Substance is not listed.
- **TSCA (Toxic Substances Control Act):**
 Substance is not listed.

- **Carcinogenic categories**
- **EPA (Environmental Protection Agency)**
 Substance is not listed.
- **TLV (Threshold Limit Value established by ACGIH)**
 Substance is not listed.
- **MAK (German Maximum Workplace Concentration)**
 Substance is not listed.
- **MOSH-Ca (National Institute for Occupational Safety and Health)**
 Substance is not listed.

- **National regulations**
- **Water hazard class:** Generally not hazardous for water.
- **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.

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· **Date of preparation / last revision 06/10/2015 / -**

· **Abbreviations and acronyms:**
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Trade name: **E. coli HB101 lyophilized**

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IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service (division of the American Chemical Society)
Acute Tox. 4: Acute toxicity, Hazard Category 4

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

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