Kit Name: $\beta(1-3,4)$ -Galactosidase (bovine testis)

Kit PN: GKX-5013

This product is a multi-level kit, composed of the following modules and individual chemical components:

Kit Components

Kit Component Part Number	Kit Component Name	Qty
GKX-5013	β(1-3,4)-Galactosidase (bovine testis), 100 μl	1 vial
WS0063	5x Reaction Buffer, 1 ml	1 vial

SDSs for each component follow this cover sheet.

Transportation Information for the Kit:

Proper Shipping Names:

DOT	IATA/ICAO	China
Not Regulated	Not Regulated	Not Regulated





Revision Date: 05/06/2019 Issue Date: 07/27/2015

1 Identification

Product identifier

Product name: $\beta(1-3,4)$ -Galactosidase (bovine testis)

· Product Code: GKX-5013, GKX-5013B

· Application of the substance / the mixture Reagents and Standards for Analytical Chemical Laboratory Use

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Agilent Technologies 5301 Stevens Creek Blvd Santa Clara, CA 95051, USA

• **Email:** pdl-msds_author@agilent.com • **Phone number:** 800-227-9770

Emergency telephone number: CHEMTREC®: 1-800-424-9300

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
- · Precautionary statements

Do not breathe dust/fume/gas/mist/vapors/spray.

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

If swallowed: Call a doctor if you feel unwell.

If on skin: Wash with plenty of soap and water.

IF INHALED: Call a doctor if you feel unwell.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
- · NFPA ratings (scale 0 4)



Health = 0 Fire = 0 Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 0 Fire = 0 Reactivity = 0

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

(Contd. on page 2)

Revision Date: 05/06/2019 Issue Date: 07/27/2015

Product name: $\beta(1-3,4)$ -Galactosidase (bovine testis)

· vPvB: Not applicable.

(Contd. of page 1)

3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.
- · Dangerous components: Void

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:** If symptoms persist consult doctor.
- 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: Use fire fighting measures that suit the environment.
- · 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 gloves / eye protection / face protection.
- **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
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· PAC-1	:
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18996-35-5 sodium dihydrogen citrate

4 mg/m³

PAC-2:

18996-35-5 sodium dihydrogen citrate

44 mg/m³

(Contd. on page 3)

Revision Date: 05/06/2019 Issue Date: 07/27/2015

Product name: $\beta(1-3,4)$ -Galactosidase (bovine testis)

(Contd. of page 2)

PAC-3:

18996-35-5 sodium dihydrogen citrate

270 mg/m³

7 Handling and storage

- Handling:
- Precautions for safe handling Wear protective gloves / eye protection / face protection.
- 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: No special requirements.
- 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:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- · Material of gloves Wear suitable 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: Wear eye protection / face protection.

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
- · Appearance:

Form: Fluid
Color: Colorless
Odor: Characteristic
Odor threshold: Not determined.

pH-value at 20 °C (68 °F):

· Change in condition

Melting point/Melting range: Undetermined.

(Contd. on page 4)

Revision Date: 05/06/2019 Issue Date: 07/27/2015

Product name: $\beta(1-3,4)$ -Galactosidase (bovine testis)

		(Contd. of page
Boiling point/Boiling range:	100 °C (212 °F)	
Flash point:	Not applicable.	
Flammability (solid, gaseous):	Not applicable.	
Decomposition temperature:	Not determined.	
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits: Lower: Upper:	Not determined. Not determined.	
Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)	
Density: Relative density Vapor density Evaporation rate	Not determined. Not determined. Not determined. Not determined.	
Solubility in / Miscibility with Water:	Fully miscible.	
Partition coefficient (n-octanol/water	er): Not determined.	
Viscosity: Dynamic: Kinematic:	Not determined. Not determined.	
Solvent content: Water: VOC content:	98.3 % 0.00 %	
Solids content: Other information	1.0 % No further relevant information available.	

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions 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: May be harmful in contact with skin.
- on the eye: No irritating effect.

(Contd. on page 5)

Revision Date: 05/06/2019 Issue Date: 07/27/2015

Product name: $\beta(1-3,4)$ -Galactosidase (bovine testis)

(Contd. of page 4)

- Sensitization: No sensitizing effects known.
- Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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: 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: Dispose of contents/container in accordance with local/regional/national/international regulations.
- 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, ADN, IMDG, IATA not regulated
- · UN proper shipping name
- DOT, ADN, IMDG, IATA not regulated

(Contd. on page 6)

Revision Date: 05/06/2019 Issue Date: 07/27/2015

Product name: $\beta(1-3,4)$ -Galactosidase (bovine testis)

		(Contd. of page 5)
Transport hazard class(es)		
· DOT, ADN, IMDG, IATA · Class	not regulated	
· Packing group · DOT, IMDG, IATA	not regulated	
· Environmental hazards:	Not applicable.	
· Special precautions for user	Not applicable.	
Transport in bulk according to Annex MARPOL73/78 and the IBC Code	II of Not applicable.	
· UN "Model Regulation":	not regulated	

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Sara
- · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

- · Proposition 65
- · Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is 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.

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

None of the ingredients is listed.

- · GHS label elements Void
- · Hazard pictograms Void
- · Signal word Void
- · Hazard statements Void

(Contd. on page 7)

Revision Date: 05/06/2019 Issue Date: 07/27/2015

Product name: $\beta(1-3,4)$ -Galactosidase (bovine testis)

(Contd. of page 6)

· Precautionary statements

Do not breathe dust/fume/gas/mist/vapors/spray.

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

If swallowed: Call a doctor if you feel unwell.

If on skin: Wash with plenty of soap and water.

IF INHALED: Call a doctor if you feel unwell.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

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

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

US





Revision Date: 04/22/2019 Issue Date: 07/27/2015

1 Identification

Product identifier

Product name: 5x Reaction Buffer

· Product Code: WS0063

· Application of the substance / the mixture Reagents and Standards for Analytical Chemical Laboratory Use

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Agilent Technologies 5301 Stevens Creek Blvd Santa Clara, CA 95051, USA

· Issuing Department: Agilent Quality Assurance

Email: pdl-msds_author@agilent.com
Phone number: 800-227-9770

Emergency telephone number: CHEMTREC®: 1-800-424-9300

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
- Precautionary statements

Do not breathe mist/vapours/spray.

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

If swallowed: Call a doctor if you feel unwell.

If on skin: Wash with plenty of soap and water.

IF INHALED: Call a doctor if you feel unwell.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Classification system:
- NFPA ratings (scale 0 4)



Health = 0 Fire = 0 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 0 Fire = 0 Reactivity = 0

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

(Contd. on page 2)

Revision Date: 04/22/2019 Issue Date: 07/27/2015

Product name: 5x Reaction Buffer

· vPvB: Not applicable.

(Contd. of page 1)

3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.
- · Dangerous components: Void

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:** If symptoms persist consult doctor.
- 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: Use fire fighting measures that suit the environment.
- · 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 gloves / eye protection / face protection.
- Environmental precautions:

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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.

Protective Action Criteria for Chemicals

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18996-35-5 sodium dihydrogen citrate

4 mg/m³

PAC-2:

18996-35-5 sodium dihydrogen citrate

44 mg/m³

(Contd. on page 3)

Revision Date: 04/22/2019 Issue Date: 07/27/2015

Product name: 5x Reaction Buffer

(Contd. of page 2)

PAC-3:

18996-35-5 sodium dihydrogen citrate

270 mg/m³

7 Handling and storage

- Handling:
- Precautions for safe handling Wear protective gloves / eye protection / face protection.
- 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: No special requirements.
- 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:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- · Material of gloves Wear suitable 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: Wear eye protection / face protection.

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
- · Appearance:

Form: Liquid
Color: Colorless
Odor: Characteristic
Odor threshold: Not determined.

pH-value at 20 °C (68 °F):

· Change in condition

Melting point/Melting range: Undetermined.

(Contd. on page 4)

Revision Date: 04/22/2019 Issue Date: 07/27/2015

Product name: 5x Reaction Buffer

		(Contd. of page
Boiling point/Boiling range:	100 °C (212 °F)	
· Flash point:	Not applicable.	
Flammability (solid, gaseous):	Not applicable.	
· Decomposition temperature:	Not determined.	
· Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits: Lower: Upper:	Not determined. Not determined.	
Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)	
Density: Relative density Vapor density Evaporation rate	Not determined. Not determined. Not determined. Not determined.	
Solubility in / Miscibility with Water:	Fully miscible.	
Partition coefficient (n-octanol/wat	er): Not determined.	
Viscosity: Dynamic: Kinematic:	Not determined. Not determined.	
Solvent content: Water: VOC content:	94.3 % 0.00 %	
Solids content: Other information	6.0 % No further relevant information available.	

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions 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: May be harmful in contact with skin.
- on the eye: No irritating effect.

(Contd. on page 5)

Revision Date: 04/22/2019 Issue Date: 07/27/2015

Product name: 5x Reaction Buffer

(Contd. of page 4)

Sensitization: No sensitizing effects known.

· Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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:

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

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

- Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation: Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

· UN	-Nu	mber
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· DOT, ADN, IMDG, IATA not regulated

· UN proper shipping name

DOT, ADN, IMDG, IATA not regulated

(Contd. on page 6)

Revision Date: 04/22/2019 Issue Date: 07/27/2015

Product name: 5x Reaction Buffer

		(Contd. of page 5
· Transport hazard class(es)		
· DOT, ADN, IMDG, IATA · Class	not regulated	
Packing group DOT, IMDG, IATA	not regulated	
· Environmental hazards:	Not applicable.	
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":	not regulated	

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Sara
- · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

- · Proposition 65
- · Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is 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.

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

None of the ingredients is listed.

- · GHS label elements Void
- · Hazard pictograms Void
- · Signal word Void
- · Hazard statements Void

(Contd. on page 7)

(Contd. of page 6)

Safety Data Sheet acc. to OSHA HCS

Revision Date: 04/22/2019 Issue Date: 07/27/2015

Product name: 5x Reaction Buffer

· Precautionary statements

Do not breathe mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Call a doctor if you feel unwell.

If on skin: Wash with plenty of soap and water. IF INHALED: Call a doctor if you feel unwell.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

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

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.