

SAFETY DATA SHEET



BL21-Gold Competent Cells, Part Number 230130

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : BL21-Gold Competent Cells, Part Number 230130
Part no. (chemical kit) : 230130
Part no. : BL21-Gold competent cells 230130-41
pUC 18 DNA Control Plasmid 200231-42

1.2 Relevant identified uses of the substance or mixture and uses advised against

Material uses : Analytical reagent.
BL21-Gold competent cells 1 ml (10 x 0.1 mL)
pUC 18 DNA Control Plasmid 0.01 ml (0.1 ng/μl)

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : BL21-Gold competent cells Mixture
pUC 18 DNA Control Plasmid Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

Ingredients of unknown toxicity : BL21-Gold competent cells Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : BL21-Gold competent cells No signal word.
pUC 18 DNA Control Plasmid No signal word.

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SECTION 2: Hazards identification

Hazard statements : BL21-Gold competent cells No known significant effects or critical hazards.
 pUC 18 DNA Control No known significant effects or critical hazards.
 Plasmid

Precautionary statements

Prevention : BL21-Gold competent cells Not applicable.
 pUC 18 DNA Control Not applicable.
 Plasmid

Response : BL21-Gold competent cells Not applicable.
 pUC 18 DNA Control Not applicable.
 Plasmid

Storage : BL21-Gold competent cells Not applicable.
 pUC 18 DNA Control Not applicable.
 Plasmid

Disposal : BL21-Gold competent cells Not applicable.
 pUC 18 DNA Control Not applicable.
 Plasmid

Hazardous ingredients : BL21-Gold competent cells Not applicable.

Supplemental label elements : BL21-Gold competent cells Safety data sheet available on request.
 pUC 18 DNA Control Not applicable.
 Plasmid

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : BL21-Gold competent cells Not applicable.
 pUC 18 DNA Control Not applicable.
 Plasmid

Special packaging requirements

Tactile warning of danger : BL21-Gold competent cells Not applicable.
 pUC 18 DNA Control Not applicable.
 Plasmid

2.3 Other hazards

Other hazards which do not result in classification : BL21-Gold competent cells None known.
 pUC 18 DNA Control None known.
 Plasmid

SECTION 3: Composition/information on ingredients

3.1 Substances : BL21-Gold competent cells Mixture
 pUC 18 DNA Control Plasmid Mixture

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SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
BL21-Gold competent cells				
Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥10 - ≤25	Not classified.	[2]
Dimethyl sulfoxide	EC: 200-664-3 CAS: 67-68-5	≤10	Aquatic Chronic 3, H412	[1]
Sucrose	REACH #: Annex IV EC: 200-334-9 CAS: 57-50-1	≤10	Not classified.	[2]
			See Section 16 for the full text of the H statements declared above.	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: BL21-Gold competent cells	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	pUC 18 DNA Control Plasmid	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	: BL21-Gold competent cells	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pUC 18 DNA Control Plasmid	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: BL21-Gold competent cells	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pUC 18 DNA Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: BL21-Gold competent cells	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	pUC 18 DNA Control Plasmid	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

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SECTION 4: First aid measures

Protection of first-aiders	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training.
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4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Inhalation	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
Inhalation	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
Skin contact	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
Ingestion	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No specific treatment. No specific treatment.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	None known. None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides No specific data.

5.3 Advice for firefighters

Special precautions for fire-fighters	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
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SECTION 6: Accidental release measures

For emergency responders	: BL21-Gold competent cells	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	pUC 18 DNA Control Plasmid	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions	: BL21-Gold competent cells	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	pUC 18 DNA Control Plasmid	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
6.3 Methods and material for containment and cleaning up		
Methods for cleaning up	: BL21-Gold competent cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	pUC 18 DNA Control Plasmid	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
6.4 Reference to other sections	: See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.	

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	: BL21-Gold competent cells	Put on appropriate personal protective equipment (see Section 8).
	pUC 18 DNA Control Plasmid	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: BL21-Gold competent cells	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	pUC 18 DNA Control Plasmid	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage :

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SECTION 7: Handling and storage

BL21-Gold competent cells

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

pUC 18 DNA Control Plasmid

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not applicable. Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
BL21-Gold competent cells	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
Glycerol	
Sucrose	
	EH40/2005 WELs (United Kingdom (UK), 12/2011). STEL: 20 mg/m ³ 15 minutes. TWA: 10 mg/m ³ 8 hours.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

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SECTION 8: Exposure controls/personal protection

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: BL21-Gold competent cells	Liquid.
	pUC 18 DNA Control Plasmid	Liquid.
Colour	: BL21-Gold competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Odour	: BL21-Gold competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Odour threshold	: BL21-Gold competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.

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SECTION 9: Physical and chemical properties

pH	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	6.4 7.5
Melting point/freezing point	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. 0°C
Initial boiling point and boiling range	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. 100°C
Flash point	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. Not available.
Evaporation rate	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. Not available.
Flammability (solid, gas)	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not applicable. Not applicable.
Upper/lower flammability or explosive limits	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. Not available.
Vapour pressure	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. Not available.
Vapour density	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. Not available.
Relative density	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. Not available.
Solubility(ies)	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. Not available.
Auto-ignition temperature	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. Not available.
Decomposition temperature	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	Not available. Not available.

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SECTION 9: Physical and chemical properties

Viscosity	: BL21-Gold competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Explosive properties	: BL21-Gold competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Oxidising properties	: BL21-Gold competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: BL21-Gold competent cells	No specific test data related to reactivity available for this product or its ingredients.
	pUC 18 DNA Control Plasmid	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: BL21-Gold competent cells	The product is stable.
	pUC 18 DNA Control Plasmid	The product is stable.
10.3 Possibility of hazardous reactions	: BL21-Gold competent cells	Under normal conditions of storage and use, hazardous reactions will not occur.
	pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: BL21-Gold competent cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
10.5 Incompatible materials	: BL21-Gold competent cells	May react or be incompatible with oxidising materials.
	pUC 18 DNA Control Plasmid	May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	: BL21-Gold competent cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
BL21-Gold competent cells Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-

Acute toxicity estimates

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SECTION 11: Toxicological information

Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
BL21-Gold competent cells Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : BL21-Gold competent cells
pUC 18 DNA Control Plasmid
Routes of entry anticipated: Oral, Dermal, Inhalation.
Not available.

Potential acute health effects

Inhalation : BL21-Gold competent cells
pUC 18 DNA Control Plasmid
No known significant effects or critical hazards.
No known significant effects or critical hazards.

Ingestion : BL21-Gold competent cells
pUC 18 DNA Control Plasmid
No known significant effects or critical hazards.
No known significant effects or critical hazards.

Skin contact : BL21-Gold competent cells
pUC 18 DNA Control Plasmid
No known significant effects or critical hazards.
No known significant effects or critical hazards.

Eye contact : BL21-Gold competent cells
pUC 18 DNA Control Plasmid
No known significant effects or critical hazards.
No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

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SECTION 11: Toxicological information

Inhalation	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
Ingestion	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
Skin contact	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
Eye contact	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Teratogenicity	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Developmental effects	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Fertility effects	: BL21-Gold competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.

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SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
BL21-Gold competent cells Dimethyl sulfoxide	Acute EC50 18299 µg/l Marine water	Algae - Nitzschia pungens	96 hours
	Acute LC50 37.437 mg/l Marine water	Crustaceans - Artemia sp.	48 hours
	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 3323 µg/l Marine water	Algae - Nitzschia pungens	96 hours

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
BL21-Gold competent cells Dimethyl sulfoxide	-1.35	3.16	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

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SECTION 14: Transport information

ADR/RID / IMDG / IATA : Not regulated.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

SECTION 15: Regulatory information

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

[EU Regulation \(EC\) No. 1907/2006 \(REACH\)](#)

[Annex XIV - List of substances subject to authorisation](#)

[Annex XIV](#)

None of the components are listed.

[Substances of very high concern](#)

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : BL21-Gold competent cells Not applicable.
pUC 18 DNA Control Plasmid Not applicable.

[Other EU regulations](#)

Industrial emissions (integrated pollution prevention and control) - Air : Listed

[Ozone depleting substances \(1005/2009/EU\)](#)

Not listed.

[Prior Informed Consent \(PIC\) \(649/2012/EU\)](#)

Not listed.

[Seveso Directive](#)

This product is not controlled under the Seveso Directive.

[International regulations](#)

[Chemical Weapon Convention List Schedules I, II & III Chemicals](#)

Not listed.

[Montreal Protocol \(Annexes A, B, C, E\)](#)

Not listed.

[Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

[Rotterdam Convention on Prior Informed Consent \(PIC\)](#)

Not listed.

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

[Inventory list](#)

Australia : All components are listed or exempted.

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SECTION 15: Regulatory information

Canada	: All components are listed or exempted.
China	: Not determined.
Europe	: All components are listed or exempted.
Japan	: <input checked="" type="checkbox"/> Japan inventory (ENCS): Not determined. <input checked="" type="checkbox"/> Japan inventory (ISHL): All components are listed or exempted.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: Not determined.
United States	: All components are listed or exempted.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

Full text of abbreviated H statements

<input checked="" type="checkbox"/> BL21-Gold competent cells H412	Harmful to aquatic life with long lasting effects.
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Full text of classifications [CLP/GHS]

<input checked="" type="checkbox"/> BL21-Gold competent cells Aquatic Chronic 3, H412	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
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Notice to reader

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