

Section 2. Hazards identification

Response	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
Storage	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	Not applicable. Not applicable.
Disposal	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	Not applicable. Not applicable.
Supplemental label elements	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	None known. None known.

2.3 Other hazards

Hazards not otherwise classified	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	None known. None known.
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Section 3. Composition/information on ingredients

Substance/mixture	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	Mixture Mixture
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Ingredient name	%	CAS number
SoloPack Gold competent cells		
Glycerol	≥10 - ≤25	56-81-5
Dimethyl sulfoxide	≤10	67-68-5
Potassium chloride	≤3	7447-40-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact	: pUC 18 DNA Control Plasmid SoloPack 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. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
Inhalation	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give

Section 4. First aid measures

Skin contact : pUC 18 DNA Control Plasmid
SoloPack Gold competent cells

mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : pUC 18 DNA Control Plasmid
SoloPack Gold competent cells

Wash out mouth with water. 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.

Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : pUC 18 DNA Control Plasmid
SoloPack Gold competent cells

Inhalation : pUC 18 DNA Control Plasmid
SoloPack Gold competent cells

Skin contact : pUC 18 DNA Control Plasmid
SoloPack Gold competent cells

Ingestion : pUC 18 DNA Control Plasmid
SoloPack Gold competent cells

No known significant effects or critical hazards. Causes eye irritation.

No known significant effects or critical hazards. No known significant effects or critical hazards.

No known significant effects or critical hazards. No known significant effects or critical hazards.

No known significant effects or critical hazards. No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : pUC 18 DNA Control Plasmid
SoloPack Gold competent cells

Inhalation : pUC 18 DNA Control Plasmid
SoloPack Gold competent cells

Skin contact : pUC 18 DNA Control Plasmid
SoloPack Gold competent cells

No specific data.

Adverse symptoms may include the following:
irritation
watering
redness

No specific data.

No specific data.

No specific data.

No specific data.

Section 4. First aid measures

Ingestion	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No specific data. No specific data.
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4.3 Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	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	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No specific treatment. No specific treatment.
Protection of first-aiders	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	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 thermal decomposition products	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	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.
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Section 5. Fire-fighting measures

Special protective equipment for fire-fighters

: pUC 18 DNA Control Plasmid

SoloPack Gold competent cells

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: pUC 18 DNA Control Plasmid

SoloPack Gold competent cells

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 spilled 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

: pUC 18 DNA Control Plasmid

SoloPack Gold competent cells

If specialized 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". If specialized 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

: pUC 18 DNA Control Plasmid

SoloPack Gold competent cells

Avoid dispersal of spilled 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).
Avoid dispersal of spilled 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 materials for containment and cleaning up

Methods for cleaning up

: pUC 18 DNA Control Plasmid

SoloPack 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.
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.

Section 6. Accidental release measures

disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures	: pUC 18 DNA Control Plasmid	Put on appropriate personal protective equipment (see Section 8).
	SoloPack Gold competent cells	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	: 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. 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.
	SoloPack Gold competent cells	

7.2 Conditions for safe storage, including any incompatibilities

: 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
SoloPack 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 unlabeled 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	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	Industrial applications, Professional applications. Industrial applications, Professional applications.
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Section 7. Handling and storage

Industrial sector specific solutions	:  UC 18 DNA Control Plasmid SoloPack Gold competent cells	Not available. Not available.
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Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
 SoloPack Gold competent cells Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust
Dimethyl sulfoxide	OSHA PEL (United States, 5/2018). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust
Potassium chloride	OARS WEEL (United States, 1/2021). TWA: 250 ppm 8 hours. None.

Biological exposure indices

No exposure indices known.

8.2 Exposure controls

Appropriate engineering controls

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

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.

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.

Section 8. Exposure controls/personal protection

- 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.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : pUC 18 DNA Control Plasmid Liquid.
SoloPack Gold competent cells Liquid.
- Color** : pUC 18 DNA Control Plasmid Not available.
SoloPack Gold competent cells Not available.
- Odor** : pUC 18 DNA Control Plasmid Not available.
SoloPack Gold competent cells Not available.
- Odor threshold** : pUC 18 DNA Control Plasmid Not available.
SoloPack Gold competent cells Not available.
- pH** : pUC 18 DNA Control Plasmid 7.5
SoloPack Gold competent cells 6.4
- Melting point/freezing point** : pUC 18 DNA Control Plasmid 0°C (32°F)
SoloPack Gold competent cells Not available.
- Boiling point, initial boiling point, and boiling range** : pUC 18 DNA Control Plasmid 100°C (212°F)
SoloPack Gold competent cells Not available.
- Flash point** :

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
 SoloPack Gold competent cells						
Dimethyl sulfoxide	87	188.6	ASTM D 93	87	188.6	
Glycerol				177	350.6	

- Evaporation rate** : pUC 18 DNA Control Plasmid Not available.
SoloPack Gold competent cells Not available.
- Flammability** : pUC 18 DNA Control Plasmid Not applicable.
SoloPack Gold competent cells Not applicable.
- Lower and upper explosion limit/flammability limit** : pUC 18 DNA Control Plasmid Not available.
SoloPack Gold competent cells Not available.
- Vapor pressure** :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
 pUC 18 DNA Control Plasmid						
water	23.8	3.2		92.258	12.3	
SoloPack Gold competent cells						
water	23.8	3.2		92.258	12.3	
Dimethyl sulfoxide	0.42	0.056	EU A.4			

Section 9. Physical and chemical properties and safety characteristics

Relative vapor density	: pUC 18 DNA Control Plasmid	Not available.
	SoloPack Gold competent cells	Not available.
Relative density	: pUC 18 DNA Control Plasmid	Not available.
	SoloPack Gold competent cells	Not available.

Solubility(ies)	: Media	Result
	pUC 18 DNA Control Plasmid	
	water	Soluble
	SoloPack Gold competent cells	
	water	Soluble

Partition coefficient: n-octanol/water	: pUC 18 DNA Control Plasmid	Not applicable.
	SoloPack Gold competent cells	Not applicable.

Auto-ignition temperature	: Ingredient name	°C	°F	Method
	SoloPack Gold competent cells			
	Dimethyl sulfoxide	300 to 302	572 to 575.6	
	Glycerol	370	698	

Decomposition temperature	: pUC 18 DNA Control Plasmid	Not available.
	SoloPack Gold competent cells	Not available.

Viscosity	: pUC 18 DNA Control Plasmid	Not available.
	SoloPack Gold competent cells	Not available.

Particle characteristics

Median particle size	: pUC 18 DNA Control Plasmid	Not applicable.
	SoloPack Gold competent cells	Not applicable.

Section 10. Stability and reactivity

10.1 Reactivity	: pUC 18 DNA Control Plasmid	No specific test data related to reactivity available for this product or its ingredients.
	SoloPack Gold competent cells	No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability	: pUC 18 DNA Control Plasmid	The product is stable.
	SoloPack Gold competent cells	The product is stable.

10.3 Possibility of hazardous reactions	: pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
	SoloPack Gold competent cells	Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid	: pUC 18 DNA Control Plasmid	No specific data.
	SoloPack Gold competent cells	No specific data.

10.5 Incompatible materials	: pUC 18 DNA Control Plasmid	May react or be incompatible with oxidizing materials.
	SoloPack Gold competent cells	May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity

10.6 Hazardous decomposition products

: pUC 18 DNA Control Plasmid

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SoloPack Gold competent cells

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
SoloPack Gold competent cells				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
SoloPack Gold competent cells					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-

Sensitization

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.

Section 11. Toxicological information

Information on the likely routes of exposure	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	Not available. Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
<u>Potential acute health effects</u>		
Eye contact	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No known significant effects or critical hazards. Causes eye irritation.
Inhalation	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No known significant effects or critical hazards. No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No specific data. Adverse symptoms may include the following: irritation watering redness
Inhalation	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No specific data. No specific data.
Skin contact	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No specific data. No specific data.
Ingestion	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No specific data. No specific data.

Delayed and immediate effects and also 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	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No known significant effects or critical hazards. No known significant effects or critical hazards.
Reproductive toxicity	: pUC 18 DNA Control Plasmid SoloPack Gold competent cells	No known significant effects or critical hazards. No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
SoloPack Gold competent cells					
SoloPack Gold competent cells	136842.1	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A
Potassium chloride	2600	N/A	N/A	N/A	N/A

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
SoloPack Gold competent cells			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Dimethyl sulfoxide	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 100 µl/L Marine water	Algae - Ulva lactuca	72 hours
	Chronic NOEC 100 µl/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	21 days
Potassium chloride	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 83000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.68 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
	Acute LC50 509.65 mg/l Fresh water	Fish - Danio rerio	96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
SoloPack Gold competent cells				
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
Dimethyl sulfoxide	OECD 301D Ready Biodegradability - Closed Bottle Test	31 % - Not readily - 28 days	-	-
Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability	
SoloPack Gold competent cells				
Dimethyl sulfoxide	-	-	Not readily	
Potassium chloride	-	-	Readily	

12.3 Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
SoloPack Gold competent cells			
Glycerol	-1.76	-	low
Dimethyl sulfoxide	-1.35	3.16	low
Potassium chloride	-0.46	-	low

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

DOT / TDG / Mexico / IMDG / IATA : Not regulated.

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.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

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

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 311: Edetic acid

Clean Air Act Section 112 : Listed

(b) Hazardous Air Pollutants (HAPs)

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : pUC 18 DNA Control Plasmid Not applicable.
SoloPack Gold competent cells EYE IRRITATION - Category 2B

Composition/information on ingredients

Name	%	Classification
 SoloPack Gold competent cells		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2B
Dimethyl sulfoxide	≤10	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B
Sucrose	≤10	COMBUSTIBLE DUSTS
Potassium chloride	≤3	EYE IRRITATION - Category 2B

State regulations

Massachusetts : The following components are listed: GLYCERINE MIST; SUCROSE DUST

New York : None of the components are listed.

New Jersey : The following components are listed: GLYCERIN; DIMETHYL SULFOXIDE

Pennsylvania : The following components are listed: 1,2,3-PROPANETRIOL; .ALPHA.-D-GLUCOPYRANOSIDE, .BETA.-D-FRUCTOFURANOSYL

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Section 15. Regulatory information

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.
Canada	: All components are listed or exempted.
China	: Not determined.
Eurasian Economic Union	:  Russian Federation inventory : All components are listed or exempted.
Japan	: Japan inventory (CSCL) : Not determined. Japan inventory (ISHL) : All components are listed or exempted.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	:  All components are active or exempted.
Viet Nam	:  All components are listed or exempted.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
 SoloPack Gold competent cells EYE IRRITATION - Category 2B	Calculation method

History

Date of issue	: 03/27/2023
Date of previous issue	: 11/25/2019
Version	: 4

Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available UN = United Nations
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 Indicates information that has changed from previously issued version.

Notice to reader

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