

SAFETY DATA SHEET



Gigapack III Plus-4 Packaging Extract, Part Number 200204

Section 1. Identification

1.1 Product identifier

Product name : Gigapack III Plus-4 Packaging Extract, Part Number 200204
Part No. (Chemical Kit) : 200204
Part No. : Gigapack III packaging extract 200201-41
 Wild-Type Lambda DNA c1857ind 1 Sam7 246203-51
 VCS257 E. coli Strain 200256-51
Validation date : 2016-02-29

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

Material uses : Analytical reagent.
 Gigapack III packaging extract 0.275 ml (11 x 0.025 ml)
 Wild-Type Lambda DNA c1857ind 1 Sam7 0.005 ml (0.21 µg/µl)
 VCS257 E. coli Strain 1 ml

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
 5301 Stevens Creek Blvd
 Santa Clara, CA 95051, USA
 800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status :	Gigapack III packaging extract	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	Wild-Type Lambda DNA c1857ind 1 Sam7	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	VCS257 E. coli Strain	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

VCS257 E. coli Strain
 H319 EYE IRRITATION - Category 2A

2.2 GHS label elements

Section 2. Hazards identification

Hazard pictograms



Signal word

- Gigapack III packaging extract No signal word.
 Wild-Type Lambda DNA c1857ind No signal word.
 1 Sam7
 VCS257 E. coli Strain Warning

Hazard statements

- Gigapack III packaging extract No known significant effects or critical hazards.
 Wild-Type Lambda DNA c1857ind No known significant effects or critical hazards.
 1 Sam7
 VCS257 E. coli Strain GHS SYMBOL - **Exclamation mark** - H319 - Causes serious eye irritation.

Precautionary statements

Prevention

- Gigapack III packaging extract Not applicable.
 Wild-Type Lambda DNA c1857ind Not applicable.
 1 Sam7
 VCS257 E. coli Strain P280 - Wear eye or face protection.
 P264 - Wash hands thoroughly after handling.

Response

- Gigapack III packaging extract Not applicable.
 Wild-Type Lambda DNA c1857ind Not applicable.
 1 Sam7
 VCS257 E. coli Strain 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 attention.

Storage

- Gigapack III packaging extract Not applicable.
 Wild-Type Lambda DNA c1857ind Not applicable.
 1 Sam7
 VCS257 E. coli Strain Not applicable.

Disposal

- Gigapack III packaging extract Not applicable.
 Wild-Type Lambda DNA c1857ind Not applicable.
 1 Sam7
 VCS257 E. coli Strain Not applicable.

Supplemental label elements

- Gigapack III packaging extract None known.
 Wild-Type Lambda DNA c1857ind None known.
 1 Sam7
 VCS257 E. coli Strain None known.

2.3 Other hazards

Hazards not otherwise classified

- Gigapack III packaging extract None known.
 Wild-Type Lambda DNA c1857ind None known.
 1 Sam7
 VCS257 E. coli Strain None known.

Section 3. Composition/information on ingredients

Substance/mixture

- Gigapack III packaging extract Mixture
 Wild-Type Lambda DNA c1857ind 1 Mixture
 Sam7
 VCS257 E. coli Strain Mixture

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
VCS257 E. coli Strain		
Glycerol	≥10 - ≤25	56-81-5
Sodium chloride	≤3	7647-14-5

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 as hazardous to health or the environment 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	: Gigapack III packaging extract	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.
	Wild-Type Lambda DNA c1857ind 1 Sam7	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.
	VCS257 E. coli Strain	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. Get medical attention.
Inhalation	: Gigapack III packaging extract	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	VCS257 E. coli Strain	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 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.
Skin contact	: Gigapack III packaging extract	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	VCS257 E. coli Strain	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.

Section 4. First aid measures

Ingestion	: Gigapack III packaging extract	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.
	Wild-Type Lambda DNA c1857ind 1 Sam7	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.
	VCS257 E. coli Strain	Wash out mouth with water. Remove dentures if any. 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. 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	: Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. Causes serious eye irritation.
Inhalation	: Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	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	: Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No specific data. No specific data. Adverse symptoms may include the following: pain or irritation watering redness
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Section 4. First aid measures

Inhalation	: Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind	No specific data.
	1 Sam7	
Skin contact	: Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind	No specific data.
	1 Sam7	
Ingestion	: Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind	No specific data.
	1 Sam7	
	VCS257 E. coli Strain	No specific data.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: Gigapack III packaging extract	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Wild-Type Lambda DNA c1857ind	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	1 Sam7	
	VCS257 E. coli Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: Gigapack III packaging extract	No specific treatment.
	Wild-Type Lambda DNA c1857ind	No specific treatment.
	1 Sam7	
	VCS257 E. coli Strain	No specific treatment.
Protection of first-aiders	: Gigapack III packaging extract	No action shall be taken involving any personal risk or without suitable training.
	Wild-Type Lambda DNA c1857ind	No action shall be taken involving any personal risk or without suitable training.
	1 Sam7	
	VCS257 E. coli Strain	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	: Gigapack III packaging extract	Use an extinguishing agent suitable for the surrounding fire.
	Wild-Type Lambda DNA c1857ind	Use an extinguishing agent suitable for the surrounding fire.
	1 Sam7	
	VCS257 E. coli Strain	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: Gigapack III packaging extract	None known.
	Wild-Type Lambda DNA c1857ind	None known.
	1 Sam7	
	VCS257 E. coli Strain	None known.

5.2 Special hazards arising from the substance or mixture

Section 5. Fire-fighting measures

Specific hazards arising from the chemical	: Gigapack III packaging extract	In a fire or if heated, a pressure increase will occur and the container may burst.
	Wild-Type Lambda DNA c1857ind 1 Sam7	In a fire or if heated, a pressure increase will occur and the container may burst.
	VCS257 E. coli Strain	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: Gigapack III packaging extract	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
	VCS257 E. coli Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters	: Gigapack III packaging extract	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.
	Wild-Type Lambda DNA c1857ind 1 Sam7	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.
	VCS257 E. coli Strain	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	: Gigapack III packaging extract	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	VCS257 E. coli Strain	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	: Gigapack III packaging extract	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.
	Wild-Type Lambda DNA c1857ind 1 Sam7	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

Section 6. Accidental release measures

VCS257 E. coli Strain

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 : Bigapack III packaging extract

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". 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".

Wild-Type Lambda DNA c1857ind
1 Sam7

VCS257 E. coli Strain

6.2 Environmental precautions

: Bigapack III packaging extract

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).

Wild-Type Lambda DNA c1857ind
1 Sam7

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).

VCS257 E. coli Strain

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 : Bigapack III packaging extract

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.

Wild-Type Lambda DNA c1857ind
1 Sam7

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.

VCS257 E. coli Strain

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

- :  Gigapack III packaging extract
- Wild-Type Lambda DNA c1857ind
1 Sam7
VCS257 E. coli Strain
- Put on appropriate personal protective equipment (see Section 8).
Put on appropriate personal protective equipment (see Section 8).
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

- :  Gigapack III packaging extract
- Wild-Type Lambda DNA c1857ind
1 Sam7
VCS257 E. coli Strain
- 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.
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.

7.2 Conditions for safe storage, including any incompatibilities

- :  Gigapack III packaging extract
- Wild-Type Lambda DNA c1857ind
1 Sam7
- 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.
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

Section 7. Handling and storage

VCS257 E. coli Strain

to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

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.

7.3 Specific end use(s)

Recommendations	: Gigapack III packaging extract	Industrial applications, Professional applications.
	Wild-Type Lambda DNA c1857ind	Industrial applications, Professional applications.
	1 Sam7	
Industrial sector specific solutions	VCS257 E. coli Strain	Industrial applications, Professional applications.
	: Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind	Not applicable.
	1 Sam7	
	VCS257 E. coli Strain	Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
VCS257 E. coli Strain	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
Glycerol	
Sodium chloride	OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust None.

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.
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Section 8. Exposure controls/personal protection

- 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: chemical splash goggles.
- 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- 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.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	Gigapack III packaging extract	Liquid.
		Wild-Type Lambda DNA c1857ind	Liquid.
		1 Sam7	
		VCS257 E. coli Strain	Liquid.
Color	:	Gigapack III packaging extract	Not available.
		Wild-Type Lambda DNA c1857ind	Not available.
		1 Sam7	
		VCS257 E. coli Strain	Not available.
Odor	:	Gigapack III packaging extract	Not available.
		Wild-Type Lambda DNA c1857ind	Not available.
		1 Sam7	
		VCS257 E. coli Strain	Not available.
Odor threshold	:	Gigapack III packaging extract	Not available.
		Wild-Type Lambda DNA c1857ind	Not available.
		1 Sam7	
		VCS257 E. coli Strain	Not available.
pH	:	Gigapack III packaging extract	8
		Wild-Type Lambda DNA c1857ind	7
		1 Sam7	
		VCS257 E. coli Strain	7
Melting point	:	Gigapack III packaging extract	Not available.
		Wild-Type Lambda DNA c1857ind	0°C (32°F)
		1 Sam7	
		VCS257 E. coli Strain	Not available.
Boiling point	:	Gigapack III packaging extract	Not available.
		Wild-Type Lambda DNA c1857ind	100°C (212°F)
		1 Sam7	
		VCS257 E. coli Strain	Not available.

Section 9. Physical and chemical properties

Flash point	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
Evaporation rate	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
Flammability (solid, gas)	: Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind	Not applicable.
	1 Sam7	
	VCS257 E. coli Strain	Not applicable.
Lower and upper explosive (flammable) limits	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
Vapor pressure	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
Vapor density	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
Relative density	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
Solubility	: Gigapack III packaging extract	Easily soluble in the following materials: cold water and hot water.
	Wild-Type Lambda DNA c1857ind	Easily soluble in the following materials: cold water and hot water.
	1 Sam7	Easily soluble in the following materials: cold water and hot water.
	VCS257 E. coli Strain	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
Auto-ignition temperature	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
Decomposition temperature	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
Viscosity	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.

Section 10. Stability and reactivity

- 10.1 Reactivity** : Gigapack III packaging extract No specific test data related to reactivity available for this product or its ingredients.
Wild-Type Lambda DNA c1857ind No specific test data related to reactivity available for this product or its ingredients.
1 Sam7
VCS257 E. coli Strain No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : Gigapack III packaging extract The product is stable.
Wild-Type Lambda DNA c1857ind The product is stable.
1 Sam7
VCS257 E. coli Strain The product is stable.
- 10.3 Possibility of hazardous reactions** : Gigapack III packaging extract Under normal conditions of storage and use, hazardous reactions will not occur.
Wild-Type Lambda DNA c1857ind Under normal conditions of storage and use, hazardous reactions will not occur.
1 Sam7
VCS257 E. coli Strain Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : Gigapack III packaging extract No specific data.
Wild-Type Lambda DNA c1857ind No specific data.
1 Sam7
VCS257 E. coli Strain No specific data.
- 10.5 Incompatible materials** : Gigapack III packaging extract May react or be incompatible with oxidizing materials.
Wild-Type Lambda DNA c1857ind May react or be incompatible with oxidizing materials.
1 Sam7
VCS257 E. coli Strain May react or be incompatible with oxidizing materials.
- 10.6 Hazardous decomposition products** : Gigapack III packaging extract Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Wild-Type Lambda DNA c1857ind Under normal conditions of storage and use, hazardous decomposition products should not be produced.
1 Sam7
VCS257 E. coli Strain 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
VCS257 E. coli Strain				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
VCS257 E. coli Strain Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	10 milligrams 24 hours 500 milligrams	- -

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

: Gigapack III packaging extract Not available.
 Wild-Type Lambda DNA c1857ind Not available.
 1 Sam7
 VCS257 E. coli Strain Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact

: Gigapack III packaging extract No known significant effects or critical hazards.
 Wild-Type Lambda DNA c1857ind No known significant effects or critical hazards.
 1 Sam7
 VCS257 E. coli Strain Causes serious eye irritation.

Inhalation

: Gigapack III packaging extract No known significant effects or critical hazards.
 Wild-Type Lambda DNA c1857ind No known significant effects or critical hazards.
 1 Sam7
 VCS257 E. coli Strain No known significant effects or critical hazards.

Skin contact

: Gigapack III packaging extract No known significant effects or critical hazards.
 Wild-Type Lambda DNA c1857ind No known significant effects or critical hazards.
 1 Sam7
 VCS257 E. coli Strain No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind	No known significant effects or critical hazards.
	1 Sam7	
	VCS257 E. coli Strain	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind	No specific data.
	1 Sam7	
	VCS257 E. coli Strain	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind	No specific data.
	1 Sam7	
	VCS257 E. coli Strain	No specific data.
Skin contact	: Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind	No specific data.
	1 Sam7	
	VCS257 E. coli Strain	No specific data.
Ingestion	: Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind	No specific data.
	1 Sam7	
	VCS257 E. coli Strain	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	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind	No known significant effects or critical hazards.
	1 Sam7	
	VCS257 E. coli Strain	No known significant effects or critical hazards.
Carcinogenicity	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind	No known significant effects or critical hazards.
	1 Sam7	
	VCS257 E. coli Strain	No known significant effects or critical hazards.
Mutagenicity	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind	No known significant effects or critical hazards.
	1 Sam7	
	VCS257 E. coli Strain	No known significant effects or critical hazards.
Teratogenicity	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind	No known significant effects or critical hazards.
	1 Sam7	
	VCS257 E. coli Strain	No known significant effects or critical hazards.

Section 11. Toxicological information

Developmental effects	: <input checked="" type="checkbox"/> Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No known significant effects or critical hazards.
Fertility effects	: <input checked="" type="checkbox"/> Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
<input checked="" type="checkbox"/> VCS257 E. coli Strain Oral	300000 mg/kg

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> VCS257 E. coli Strain	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Glycerol	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
Sodium chloride	Acute EC50 28.85 mg/dm3 Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
<input checked="" type="checkbox"/> VCS257 E. coli Strain Glycerol	-1.76	-	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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. 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

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

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

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
Clean Water Act (CWA) 311: Edetic acid

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

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 : Immediate (acute) health hazard

Section 15. Regulatory information

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
✓ VCS257 E. coli Strain						
Glycerol	≥10 - ≤25	No.	No.	No.	Yes.	No.
Sodium chloride	≤3	No.	No.	No.	Yes.	No.

State regulations

- Massachusetts** : The following components are listed: SUCROSE DUST; GLYCERINE MIST
- New York** : None of the components are listed.
- New Jersey** : The following components are listed: GLYCERIN; 1,2,3-PROPANETRIOL
- Pennsylvania** : The following components are listed: .ALPHA.-D-GLUCOPYRANOSIDE, .BETA.-D-FRUCTOFURANOSYL; 1,2,3-PROPANETRIOL

California Prop. 65

No products were found.

- Canada inventory** : At least one component is not listed in DSL but all such components are listed in NDSL.

International regulations

- International lists** :
- ✓ **Australia inventory (AICS)**: Not determined.
 - China inventory (IECSC)**: Not determined.
 - Japan inventory (ENCS)**: Not determined.
 - Japan inventory (ISHL)**: Not determined.
 - Korea inventory**: Not determined.
 - Malaysia Inventory (EHS Register)**: Not determined.
 - New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
 - Philippines inventory (PICCS)**: Not determined.
 - Taiwan Chemical Substances Inventory (TCSI)**: All components are listed or exempted.
 - Turkey inventory**: Not determined.

- Chemical Weapons Convention List Schedule I Chemicals** : Not listed

- Chemical Weapons Convention List Schedule II Chemicals** : Not listed

- Chemical Weapons Convention List Schedule III Chemicals** : Not listed

Section 16. Other information

History

- Date of issue** : 02/29/2016
- Date of previous issue** : 04/17/2014.
- Version** : 3.01

✓ Indicates information that has changed from previously issued version.

Notice to reader

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