

Section 2. Hazards identification

2.2 GHS label elements

Hazard pictograms	: ViraPack Transfection Kit Solution 1	
Signal word	: ViraPack Transfection Kit Solution 1 ViraPack Transfection Kit Solution 2 Virapack Transfection Kit Solution 3 pCMV β-Gal Control Plasmid	Warning No signal word. Warning No signal word.
Hazard statements	: ViraPack Transfection Kit Solution 1 ViraPack Transfection Kit Solution 2 Virapack Transfection Kit Solution 3 pCMV β-Gal Control Plasmid	H319 - Causes serious eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Precautionary statements		
Prevention	: ViraPack Transfection Kit Solution 1 ViraPack Transfection Kit Solution 2 Virapack Transfection Kit Solution 3 pCMV β-Gal Control Plasmid	P280 - Wear eye or face protection. Not applicable. Not applicable. Not applicable.
Response	: ViraPack Transfection Kit Solution 1 ViraPack Transfection Kit Solution 2 Virapack Transfection Kit Solution 3 pCMV β-Gal Control Plasmid	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. Not applicable. Not applicable. Not applicable.
Storage	: ViraPack Transfection Kit Solution 1 ViraPack Transfection Kit Solution 2 Virapack Transfection Kit Solution 3 pCMV β-Gal Control Plasmid	Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	: ViraPack Transfection Kit Solution 1 ViraPack Transfection Kit Solution 2 Virapack Transfection Kit Solution 3 pCMV β-Gal Control Plasmid	Not applicable. Not applicable. Not applicable. Not applicable.

Section 2. Hazards identification

Supplemental label elements	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	None known.
	ViraPack Transfection Kit Solution 2	None known.
	Virapack Transfection Kit Solution 3	Avoid contact with skin and clothing. Wash thoroughly after handling.
	pCMV β -Gal Control Plasmid	None known.

2.3 Other hazards

Hazards not otherwise classified	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	None known.
	ViraPack Transfection Kit Solution 2	None known.
	Virapack Transfection Kit Solution 3	Prolonged or repeated contact may dry skin and cause irritation.
	pCMV β -Gal Control Plasmid	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: ViraPack Transfection Kit Solution 1	Mixture
	ViraPack Transfection Kit Solution 2	Mixture
	Virapack Transfection Kit Solution 3	Mixture
	pCMV β -Gal Control Plasmid	Mixture

Ingredient name	%	CAS number
<input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1 Calcium chloride (CaCl ₂), dihydrate	≥25 - ≤50	10035-04-8
ViraPack Transfection Kit Solution 2 Sodium chloride	≤3	7647-14-5
Virapack Transfection Kit Solution 3 Ethanol	≤3	64-17-5

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	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	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.
	ViraPack Transfection Kit Solution 2	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.
	Virapack Transfection Kit Solution 3	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.
	pCMV β -Gal 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.

Section 4. First aid measures

Inhalation	: ViraPack Transfection Kit Solution 1	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.
	ViraPack Transfection Kit Solution 2	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Virapack Transfection Kit Solution 3	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	pCMV β -Gal 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	:  ViraPack Transfection Kit Solution 1	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.
	ViraPack Transfection Kit Solution 2	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Virapack Transfection Kit Solution 3	Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pCMV β -Gal Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: ViraPack Transfection Kit Solution 1	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.

Section 4. First aid measures

ViraPack Transfection Kit Solution 2	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.
Virapack Transfection Kit Solution 3	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.
pCMV β -Gal 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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: ViraPack Transfection Kit Solution 1	Causes serious eye irritation.
	ViraPack Transfection Kit Solution 2	No known significant effects or critical hazards.
	Virapack Transfection Kit Solution 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Inhalation	: ViraPack Transfection Kit Solution 1	No known significant effects or critical hazards.
	ViraPack Transfection Kit Solution 2	No known significant effects or critical hazards.
	Virapack Transfection Kit Solution 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Skin contact	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	No known significant effects or critical hazards.
	ViraPack Transfection Kit Solution 2	No known significant effects or critical hazards.
	Virapack Transfection Kit Solution 3	Defatting to the skin. May cause skin dryness and irritation.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Ingestion	: ViraPack Transfection Kit Solution 1	No known significant effects or critical hazards.
	ViraPack Transfection Kit Solution 2	No known significant effects or critical hazards.
	Virapack Transfection Kit Solution 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact	: ViraPack Transfection Kit Solution 1	Adverse symptoms may include the following: pain or irritation watering redness
	ViraPack Transfection Kit Solution 2	No specific data.
	Virapack Transfection Kit Solution 3	No specific data.
Inhalation	: ViraPack Transfection Kit Solution 1	No specific data.
	ViraPack Transfection Kit Solution 2	No specific data.
	Virapack Transfection Kit Solution 3	No specific data.
Skin contact	: ViraPack Transfection Kit Solution 1	No specific data.
	ViraPack Transfection Kit Solution 2	No specific data.
	Virapack Transfection Kit Solution 3	Adverse symptoms may include the following: irritation dryness cracking
Ingestion	: pCMV β -Gal Control Plasmid	No specific data.
	ViraPack Transfection Kit Solution 1	No specific data.
	ViraPack Transfection Kit Solution 2	No specific data.
	Virapack Transfection Kit Solution 3	No specific data.

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

Notes to physician	: ViraPack Transfection Kit Solution 1	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	ViraPack Transfection Kit Solution 2	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Virapack Transfection Kit Solution 3	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	pCMV β -Gal Control Plasmid	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: ViraPack Transfection Kit Solution 1	No specific treatment.
	ViraPack Transfection Kit Solution 2	No specific treatment.
	Virapack Transfection Kit Solution 3	No specific treatment.
	pCMV β -Gal Control Plasmid	No specific treatment.

Section 4. First aid measures

Protection of first-aiders	: ViraPack Transfection Kit Solution 1	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.
	ViraPack Transfection Kit Solution 2	No action shall be taken involving any personal risk or without suitable training.
	Virapack Transfection Kit Solution 3	No action shall be taken involving any personal risk or without suitable training.
	pCMV β -Gal Control Plasmid	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	: ViraPack Transfection Kit Solution 1	Use an extinguishing agent suitable for the surrounding fire.
	ViraPack Transfection Kit Solution 2	Use an extinguishing agent suitable for the surrounding fire.
	Virapack Transfection Kit Solution 3	Use an extinguishing agent suitable for the surrounding fire.
	pCMV β -Gal Control Plasmid	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: ViraPack Transfection Kit Solution 1	None known.
	ViraPack Transfection Kit Solution 2	None known.
	Virapack Transfection Kit Solution 3	None known.
	pCMV β -Gal Control Plasmid	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: ViraPack Transfection Kit Solution 1	In a fire or if heated, a pressure increase will occur and the container may burst.
	ViraPack Transfection Kit Solution 2	In a fire or if heated, a pressure increase will occur and the container may burst.
	Virapack Transfection Kit Solution 3	In a fire or if heated, a pressure increase will occur and the container may burst.
	pCMV β -Gal Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: ViraPack Transfection Kit Solution 1	Decomposition products may include the following materials: halogenated compounds metal oxide/oxides
	ViraPack Transfection Kit Solution 2	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds metal oxide/oxides
	Virapack Transfection Kit Solution 3	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides

Section 5. Fire-fighting measures

pCMV β -Gal Control Plasmid No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters

ViraPack Transfection Kit Solution 1	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.
ViraPack Transfection Kit Solution 2	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.
Virapack Transfection Kit Solution 3	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.
pCMV β -Gal 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.

Special protective equipment for fire-fighters

ViraPack Transfection Kit Solution 1	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
ViraPack Transfection Kit Solution 2	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Virapack Transfection Kit Solution 3	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
pCMV β -Gal 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.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

ViraPack Transfection Kit Solution 1	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.
ViraPack Transfection Kit Solution 2	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.
Virapack Transfection Kit Solution 3	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.

Section 6. Accidental release measures

	pCMV β -Gal 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 spilled material. Put on appropriate personal protective equipment.
For emergency responders	: ViraPack Transfection Kit Solution 1	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".
	ViraPack Transfection Kit Solution 2	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".
	Virapack Transfection Kit Solution 3	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".
	pCMV β -Gal Control Plasmid	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	: ViraPack Transfection Kit Solution 1	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).
	ViraPack Transfection Kit Solution 2	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).
	Virapack Transfection Kit Solution 3	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).
	pCMV β -Gal Control Plasmid	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	: ViraPack Transfection Kit Solution 1	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.
	ViraPack Transfection Kit Solution 2	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.
	Virapack Transfection Kit Solution 3	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble.

Section 6. Accidental release measures

pCMV β -Gal Control Plasmid

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. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures

: ViraPack Transfection Kit Solution
1

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.

ViraPack Transfection Kit Solution
2

Put on appropriate personal protective equipment (see Section 8).

Virapack Transfection Kit Solution
3

Put on appropriate personal protective equipment (see Section 8).

pCMV β -Gal Control Plasmid

Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene

: ViraPack Transfection Kit Solution
1

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.

ViraPack Transfection Kit Solution
2

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.

Virapack Transfection Kit Solution
3

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.

pCMV β -Gal 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

:

Section 7. Handling and storage

ViraPack Transfection Kit Solution 1	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.
ViraPack Transfection Kit Solution 2	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.
Virapack Transfection Kit Solution 3	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.
pCMV β -Gal 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.

7.3 Specific end use(s)

Recommendations

: ViraPack Transfection Kit Solution 1	Industrial applications, Professional applications.
ViraPack Transfection Kit Solution 2	Industrial applications, Professional applications.
Virapack Transfection Kit Solution 3	Industrial applications, Professional applications.
pCMV β -Gal Control Plasmid	Industrial applications, Professional applications.

Industrial sector specific solutions

: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	Not available.
ViraPack Transfection Kit Solution 2	Not available.
Virapack Transfection Kit Solution 3	Not available.
pCMV β -Gal Control Plasmid	Not available.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
ViraPack Transfection Kit Solution 1 Calcium chloride (CaCl ₂), dihydrate	None.
ViraPack Transfection Kit Solution 2 Sodium chloride	None.
Virapack Transfection Kit Solution 3 Ethanol	ACGIH TLV (United States, 3/2020). STEL: 1000 ppm 15 minutes. OSHA PEL 1989 (United States, 3/1989). TWA: 1000 ppm 8 hours. TWA: 1900 mg/m ³ 8 hours. NIOSH REL (United States, 10/2016). TWA: 1000 ppm 10 hours. TWA: 1900 mg/m ³ 10 hours. OSHA PEL (United States, 5/2018). TWA: 1000 ppm 8 hours. TWA: 1900 mg/m ³ 8 hours.

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

: 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.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	ViraPack Transfection Kit Solution	Liquid.
		1	
		ViraPack Transfection Kit Solution	Liquid.
		2	
Color	:	Virapack Transfection Kit Solution	Liquid.
		3	
		pCMV β -Gal Control Plasmid	Liquid.
Color	:	ViraPack Transfection Kit Solution	Not available.
		1	
		ViraPack Transfection Kit Solution	Not available.
		2	
Odor	:	Virapack Transfection Kit Solution	Not available.
		3	
		pCMV β -Gal Control Plasmid	Not available.
Odor	:	ViraPack Transfection Kit Solution	Not available.
		1	
		ViraPack Transfection Kit Solution	Not available.
		2	
Odor threshold	:	Virapack Transfection Kit Solution	Not available.
		3	
		pCMV β -Gal Control Plasmid	Not available.
pH	:	ViraPack Transfection Kit Solution	Not available.
		1	
		ViraPack Transfection Kit Solution	6.95
		2	
Melting point	:	Virapack Transfection Kit Solution	Not available.
		3	
		pCMV β -Gal Control Plasmid	Not available.
Melting point	:	ViraPack Transfection Kit Solution	Not available.
		1	
		ViraPack Transfection Kit Solution	0°C (32°F)
		2	
Boiling point	:	Virapack Transfection Kit Solution	Not available.
		3	
		pCMV β -Gal Control Plasmid	0°C (32°F)
Boiling point	:	ViraPack Transfection Kit Solution	Not available.
		1	
		ViraPack Transfection Kit Solution	100°C (212°F)
		2	
Flash point	:	Virapack Transfection Kit Solution	Not available.
		3	
		pCMV β -Gal Control Plasmid	100°C (212°F)
Flash point	:	ViraPack Transfection Kit Solution	Not available.
		1	
		ViraPack Transfection Kit Solution	Not available.
		2	
Flash point	:	Virapack Transfection Kit Solution	Not available.
		3	
		pCMV β -Gal Control Plasmid	Not available.

Section 9. Physical and chemical properties

Evaporation rate	: ViraPack Transfection Kit Solution	Not available.
	1	
	ViraPack Transfection Kit Solution	Not available.
	2	
	Virapack Transfection Kit Solution	Not available.
	3	
	pCMV β -Gal Control Plasmid	Not available.
Flammability (solid, gas)	: ViraPack Transfection Kit Solution	Not applicable.
	1	
	ViraPack Transfection Kit Solution	Not applicable.
	2	
	Virapack Transfection Kit Solution	Not applicable.
	3	
	pCMV β -Gal Control Plasmid	Not applicable.
Lower and upper explosive (flammable) limits	: ViraPack Transfection Kit Solution	Not available.
	1	
	ViraPack Transfection Kit Solution	Not available.
	2	
	Virapack Transfection Kit Solution	Not available.
	3	
	pCMV β -Gal Control Plasmid	Not available.
Vapor pressure	: ViraPack Transfection Kit Solution	Not available.
	1	
	ViraPack Transfection Kit Solution	Not available.
	2	
	Virapack Transfection Kit Solution	Not available.
	3	
	pCMV β -Gal Control Plasmid	Not available.
Vapor density	: ViraPack Transfection Kit Solution	Not available.
	1	
	ViraPack Transfection Kit Solution	Not available.
	2	
	Virapack Transfection Kit Solution	Not available.
	3	
	pCMV β -Gal Control Plasmid	Not available.
Relative density	: ViraPack Transfection Kit Solution	Not available.
	1	
	ViraPack Transfection Kit Solution	Not available.
	2	
	Virapack Transfection Kit Solution	Not available.
	3	
	pCMV β -Gal Control Plasmid	Not available.
Solubility	: ViraPack Transfection Kit Solution	Soluble in the following materials: cold water and hot water.
	1	
	ViraPack Transfection Kit Solution	Easily soluble in the following materials: cold water and hot water.
	2	
	Virapack Transfection Kit Solution	Easily soluble in the following materials: cold water and hot water.
	3	
	pCMV β -Gal Control Plasmid	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: ViraPack Transfection Kit Solution	Not available.
	1	
	ViraPack Transfection Kit Solution	Not available.
	2	
	Virapack Transfection Kit Solution	Not available.
	3	
	pCMV β -Gal Control Plasmid	Not available.

Section 9. Physical and chemical properties

Auto-ignition temperature	: ViraPack Transfection Kit Solution	Not available.
	1	
	ViraPack Transfection Kit Solution	Not available.
	2	
	Virapack Transfection Kit Solution	Not available.
	3	
	pCMV β -Gal Control Plasmid	Not available.
Decomposition temperature	: ViraPack Transfection Kit Solution	Not available.
	1	
	ViraPack Transfection Kit Solution	Not available.
	2	
	Virapack Transfection Kit Solution	Not available.
	3	
	pCMV β -Gal Control Plasmid	Not available.
Viscosity	: ViraPack Transfection Kit Solution	Not available.
	1	
	ViraPack Transfection Kit Solution	Not available.
	2	
	Virapack Transfection Kit Solution	Not available.
	3	
	pCMV β -Gal Control Plasmid	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: ViraPack Transfection Kit Solution	No specific test data related to reactivity available for this product or its ingredients.
	1	
	ViraPack Transfection Kit Solution	No specific test data related to reactivity available for this product or its ingredients.
	2	
	Virapack Transfection Kit Solution	No specific test data related to reactivity available for this product or its ingredients.
	3	
	pCMV β -Gal Control Plasmid	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: ViraPack Transfection Kit Solution	The product is stable.
	1	
	ViraPack Transfection Kit Solution	The product is stable.
	2	
	Virapack Transfection Kit Solution	The product is stable.
	3	
	pCMV β -Gal Control Plasmid	The product is stable.
10.3 Possibility of hazardous reactions	: ViraPack Transfection Kit Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
	1	
	ViraPack Transfection Kit Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
	2	
	Virapack Transfection Kit Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
	3	
	pCMV β -Gal Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: ViraPack Transfection Kit Solution	No specific data.
	1	
	ViraPack Transfection Kit Solution	No specific data.
	2	
	Virapack Transfection Kit Solution	No specific data.
	3	
	pCMV β -Gal Control Plasmid	No specific data.

Section 10. Stability and reactivity

10.5 Incompatible materials	: ViraPack Transfection Kit Solution 1	May react or be incompatible with oxidizing materials.
	ViraPack Transfection Kit Solution 2	May react or be incompatible with oxidizing materials.
	Virapack Transfection Kit Solution 3	May react or be incompatible with oxidizing materials.
	pCMV β -Gal Control Plasmid	May react or be incompatible with oxidizing materials.
10.6 Hazardous decomposition products	: ViraPack Transfection Kit Solution 1	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	ViraPack Transfection Kit Solution 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Virapack Transfection Kit Solution 3	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pCMV β -Gal 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
ViraPack Transfection Kit Solution 2 Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
Virapack Transfection Kit Solution 3 Ethanol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	124700 mg/m ³ 7 g/kg	4 hours -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
ViraPack Transfection Kit Solution 2 Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Virapack Transfection Kit Solution 3 Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	0.06666667 minutes 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	100 uL	-

Sensitization

Not available.

Mutagenicity

Section 11. Toxicological information

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Virapack Transfection Kit Solution 3 Ethanol	-	1	-

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Virapack Transfection Kit Solution 3 Ethanol	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Virapack Transfection Kit Solution 1	Routes of entry anticipated: Oral, Dermal, Inhalation.
Virapack Transfection Kit Solution 2	Routes of entry anticipated: Oral, Dermal, Inhalation.
Virapack Transfection Kit Solution 3	Routes of entry anticipated: Oral, Dermal, Inhalation.
pCMV β -Gal Control Plasmid	Not available.

Potential acute health effects

Eye contact

Virapack Transfection Kit Solution 1	Causes serious eye irritation.
Virapack Transfection Kit Solution 2	No known significant effects or critical hazards.
Virapack Transfection Kit Solution 3	No known significant effects or critical hazards.
pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Inhalation

Virapack Transfection Kit Solution 1	No known significant effects or critical hazards.
Virapack Transfection Kit Solution 2	No known significant effects or critical hazards.
Virapack Transfection Kit Solution 3	No known significant effects or critical hazards.
pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Skin contact

Virapack Transfection Kit Solution 1	No known significant effects or critical hazards.
Virapack Transfection Kit Solution 2	No known significant effects or critical hazards.
Virapack Transfection Kit Solution 3	Defatting to the skin. May cause skin dryness and irritation.
pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion	: ViraPack Transfection Kit Solution 1	No known significant effects or critical hazards.
	ViraPack Transfection Kit Solution 2	No known significant effects or critical hazards.
	Virapack Transfection Kit Solution 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: ViraPack Transfection Kit Solution 1	Adverse symptoms may include the following: pain or irritation watering redness
	ViraPack Transfection Kit Solution 2	No specific data.
	Virapack Transfection Kit Solution 3	No specific data.
	pCMV β -Gal Control Plasmid	No specific data.
Inhalation	: ViraPack Transfection Kit Solution 1	No specific data.
	ViraPack Transfection Kit Solution 2	No specific data.
	Virapack Transfection Kit Solution 3	No specific data.
	pCMV β -Gal Control Plasmid	No specific data.
Skin contact	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	No specific data.
	ViraPack Transfection Kit Solution 2	No specific data.
	Virapack Transfection Kit Solution 3	Adverse symptoms may include the following: irritation dryness cracking
	pCMV β -Gal Control Plasmid	No specific data.
Ingestion	: ViraPack Transfection Kit Solution 1	No specific data.
	ViraPack Transfection Kit Solution 2	No specific data.
	Virapack Transfection Kit Solution 3	No specific data.
	pCMV β -Gal Control Plasmid	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

Section 11. Toxicological information

General	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	No known significant effects or critical hazards.
	ViraPack Transfection Kit Solution 2	No known significant effects or critical hazards.
	Virapack Transfection Kit Solution 3	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Carcinogenicity	: pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	No known significant effects or critical hazards.
	ViraPack Transfection Kit Solution 2	No known significant effects or critical hazards.
	Virapack Transfection Kit Solution 3	No known significant effects or critical hazards.
Mutagenicity	: pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	No known significant effects or critical hazards.
	ViraPack Transfection Kit Solution 2	No known significant effects or critical hazards.
	Virapack Transfection Kit Solution 3	No known significant effects or critical hazards.
Reproductive toxicity	: pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	No known significant effects or critical hazards.
	ViraPack Transfection Kit Solution 2	No known significant effects or critical hazards.
	Virapack Transfection Kit Solution 3	No known significant effects or critical hazards.
	: pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
ViraPack Transfection Kit Solution 2					
ViraPack Transfection Kit Solution 2	187500	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A
Virapack Transfection Kit Solution 3					
Ethanol	7000	N/A	N/A	124.7	N/A

Other information	: <input checked="" type="checkbox"/> ViraPack Transfection Kit Solution 1	Not available.
	ViraPack Transfection Kit Solution 2	Adverse symptoms may include the following: May cause skin sensitization.
	Virapack Transfection Kit Solution 3	Not available.
	: pCMV β -Gal Control Plasmid	Not available.

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
ViraPack Transfection Kit Solution 1 Calcium chloride (CaCl ₂), dihydrate	Acute EC50 2900 mg/l Fresh water	Algae	72 hours
	Acute NOEC 2000 mg/l Fresh water	Daphnia	48 hours
ViraPack Transfection Kit Solution 2 Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 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 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
Virapack Transfection Kit Solution 3 Ethanol	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
	Acute EC50 3306 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 1074 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 5680 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 11000000 µg/l Marine water	Fish - Alburnus alburnus	96 hours
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 µl/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days

12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Virapack Transfection Kit Solution 3 Ethanol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Virapack Transfection Kit Solution 3 Ethanol	-0.35	0.5	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: Disodium hydrogenorthophosphate; 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

Section 15. Regulatory information

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification :

1	ViraPack Transfection Kit Solution	EYE IRRITATION - Category 2A
2	ViraPack Transfection Kit Solution	Not applicable.
3	Virapack Transfection Kit Solution	HNOC - Defatting irritant
	pCMV β-Gal Control Plasmid	Not applicable.

Composition/information on ingredients

Name	%	Classification
ViraPack Transfection Kit Solution 1 Calcium chloride (CaCl ₂), dihydrate	≥25 - ≤50	EYE IRRITATION - Category 2A
ViraPack Transfection Kit Solution 2 Sodium chloride	≤3	EYE IRRITATION - Category 2A
Virapack Transfection Kit Solution 3 Ethanol	≤3	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant

State regulations

Massachusetts : None of the components are listed.
New York : None of the components are listed.
New Jersey : None of the components are listed.
Pennsylvania : None of the components are listed.
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.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : Not determined.
Canada : Not determined.

Section 15. Regulatory information

China	: Not determined.
Europe	: Not determined.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: Not determined.

Section 16. Other information


History

Date of issue	: 07/19/2021
Date of previous issue	: 04/08/2019
Version	: 6

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

Procedure used to derive the classification

Classification	Justification
 MiraPack Transfection Kit Solution 1 EYE IRRITATION - Category 2A	Calculation method

 Indicates information that has changed from previously issued version.

Notice to reader

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