

SAFETY DATA SHEET



pESC-TRP Yeast Epitope Tagging Vector, Part Number 217453

Section 1. Identification

1.1 Product identifier

Product name : pESC-TRP Yeast Epitope Tagging Vector, Part Number 217453
Part No. (Chemical Kit) : 217453
Part No. : pESC-TRP Vector 217453-51
 GAL 1 Forward Primer Lyophilized 217451-52
 GAL 1 Reverse Primer Lyophilized 217451-53
 GAL 10 Forward Primer Lyophilized 217451-54
 GAL 10 Reverse Primer Lyophilized 217451-55
 YPH 499 Yeast Strain 200257-41
 YPH 500 Yeast Strain 200258-41
 YPH 501 Yeast Strain 200259-41

Validation date : 3/30/2017

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

Material uses : Analytical reagent.
 pESC-TRP Vector 0.02 ml (20 µg 1 µg/µl)
 GAL 1 Forward Primer Lyophilized 0.0025 mg
 GAL 1 Reverse Primer Lyophilized 0.0025 mg
 GAL 10 Forward Primer Lyophilized 0.0025 mg
 GAL 10 Reverse Primer Lyophilized 0.0025 mg
 YPH 499 Yeast Strain 0.5 ml
 YPH 500 Yeast Strain 0.5 ml
 YPH 501 Yeast Strain 0.5 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 : pESC-TRP Vector	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.
GAL 1 Forward Primer Lyophilized	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.
GAL 1 Reverse Primer Lyophilized	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to

Section 2. Hazards identification

GAL 10 Forward Primer Lyophilized	the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product. 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.
GAL 10 Reverse Primer Lyophilized	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.
YPH 499 Yeast Strain	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
YPH 500 Yeast Strain	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
YPH 501 Yeast Strain	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

YPH 499 Yeast Strain

H320 EYE IRRITATION - Category 2B

YPH 500 Yeast Strain

H320 EYE IRRITATION - Category 2B

YPH 501 Yeast Strain

H320 EYE IRRITATION - Category 2B

Ingredients of unknown toxicity

YPH 499 Yeast Strain	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 2%
YPH 500 Yeast Strain	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 2%
YPH 501 Yeast Strain	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 2%

2.2 GHS label elements

Signal word

pESC-TRP Vector	No signal word.
GAL 1 Forward Primer Lyophilized	No signal word.
GAL 1 Reverse Primer Lyophilized	No signal word.
GAL 10 Forward Primer Lyophilized	No signal word.
GAL 10 Reverse Primer Lyophilized	No signal word.
YPH 499 Yeast Strain	Warning
YPH 500 Yeast Strain	Warning
YPH 501 Yeast Strain	Warning

Hazard statements

pESC-TRP Vector	No known significant effects or critical hazards.
GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
YPH 499 Yeast Strain	H320 - Causes eye irritation.
YPH 500 Yeast Strain	H320 - Causes eye irritation.

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	YPH 501 Yeast Strain	H320 - Causes eye irritation.
Precautionary statements		
Prevention	: pESC-TRP Vector	Not applicable.
	GAL 1 Forward Primer Lyophilized	Not applicable.
	GAL 1 Reverse Primer Lyophilized	Not applicable.
	GAL 10 Forward Primer Lyophilized	Not applicable.
	GAL 10 Reverse Primer Lyophilized	Not applicable.
	YPH 499 Yeast Strain	P264 - Wash hands thoroughly after handling.
	YPH 500 Yeast Strain	P264 - Wash hands thoroughly after handling.
	YPH 501 Yeast Strain	P264 - Wash hands thoroughly after handling.
Response	: pESC-TRP Vector	Not applicable.
	GAL 1 Forward Primer Lyophilized	Not applicable.
	GAL 1 Reverse Primer Lyophilized	Not applicable.
	GAL 10 Forward Primer Lyophilized	Not applicable.
	GAL 10 Reverse Primer Lyophilized	Not applicable.
	YPH 499 Yeast 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.
	YPH 500 Yeast 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.
	YPH 501 Yeast 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	: pESC-TRP Vector	Not applicable.
	GAL 1 Forward Primer Lyophilized	Not applicable.
	GAL 1 Reverse Primer Lyophilized	Not applicable.
	GAL 10 Forward Primer Lyophilized	Not applicable.
	GAL 10 Reverse Primer Lyophilized	Not applicable.
	YPH 499 Yeast Strain	Not applicable.
	YPH 500 Yeast Strain	Not applicable.
	YPH 501 Yeast Strain	Not applicable.
Disposal	: pESC-TRP Vector	Not applicable.
	GAL 1 Forward Primer Lyophilized	Not applicable.
	GAL 1 Reverse Primer Lyophilized	Not applicable.
	GAL 10 Forward Primer Lyophilized	Not applicable.
	GAL 10 Reverse Primer Lyophilized	Not applicable.
	YPH 499 Yeast Strain	Not applicable.
	YPH 500 Yeast Strain	Not applicable.
	YPH 501 Yeast Strain	Not applicable.

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Supplemental label elements	: pESC-TRP Vector	None known.
	GAL 1 Forward Primer Lyophilized	None known.
	GAL 1 Reverse Primer Lyophilized	None known.
	GAL 10 Forward Primer Lyophilized	None known.
	GAL 10 Reverse Primer Lyophilized	None known.
	YPH 499 Yeast Strain	None known.
	YPH 500 Yeast Strain	None known.
	YPH 501 Yeast Strain	None known.

2.3 Other hazards

Hazards not otherwise classified	: pESC-TRP Vector	None known.
	GAL 1 Forward Primer Lyophilized	None known.
	GAL 1 Reverse Primer Lyophilized	None known.
	GAL 10 Forward Primer Lyophilized	None known.
	GAL 10 Reverse Primer Lyophilized	None known.
	YPH 499 Yeast Strain	None known.
	YPH 500 Yeast Strain	None known.
	YPH 501 Yeast Strain	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: pESC-TRP Vector	Mixture
	GAL 1 Forward Primer Lyophilized	Mixture
	GAL 1 Reverse Primer Lyophilized	Mixture
	GAL 10 Forward Primer Lyophilized	Mixture
	GAL 10 Reverse Primer Lyophilized	Mixture
	YPH 499 Yeast Strain	Mixture
	YPH 500 Yeast Strain	Mixture
	YPH 501 Yeast Strain	Mixture

Ingredient name	%	CAS number
<p>YPH 499 Yeast Strain Glycerol</p>	≥10 - ≤25	56-81-5
<p>YPH 500 Yeast Strain Glycerol</p>	≥10 - ≤25	56-81-5
<p>YPH 501 Yeast Strain Glycerol</p>	≥10 - ≤25	56-81-5

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	: pESC-TRP Vector	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.
	GAL 1 Forward Primer Lyophilized	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.
	GAL 1 Reverse Primer Lyophilized	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.
	GAL 10 Forward Primer Lyophilized	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.
	GAL 10 Reverse Primer Lyophilized	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.
	YPH 499 Yeast 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. If irritation persists, get medical attention.
	YPH 500 Yeast 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. If irritation persists, get medical attention.
	YPH 501 Yeast 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. If irritation persists, get medical attention.
Inhalation	: pESC-TRP Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	GAL 1 Forward Primer Lyophilized	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.
	GAL 1 Reverse Primer Lyophilized	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.
	GAL 10 Forward Primer Lyophilized	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

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GAL 10 Reverse Primer Lyophilized	to be kept under medical surveillance for 48 hours. 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.
YPH 499 Yeast 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.
YPH 500 Yeast 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.
YPH 501 Yeast 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	: pESC-TRP Vector Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
GAL 1 Forward Primer Lyophilized	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
GAL 1 Reverse Primer Lyophilized	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
GAL 10 Forward Primer Lyophilized	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
GAL 10 Reverse Primer Lyophilized	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get

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	YPH 499 Yeast Strain	medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	YPH 500 Yeast 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.
	YPH 501 Yeast 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.
Ingestion	: pESC-TRP Vector	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.
	GAL 1 Forward Primer Lyophilized	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.
	GAL 1 Reverse Primer Lyophilized	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.
	GAL 10 Forward Primer Lyophilized	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.
	GAL 10 Reverse Primer Lyophilized	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.
	YPH 499 Yeast 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

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YPH 500 Yeast Strain

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.

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.

YPH 501 Yeast 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

: pESC-TRP Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Causes eye irritation. Causes eye irritation. Causes eye irritation.
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Inhalation	: pESC-TRP Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
Skin contact	: pESC-TRP Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
Ingestion	: pESC-TRP Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
Over-exposure signs/symptoms	: pESC-TRP Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
Eye contact	: pESC-TRP Vector	No specific data.
	GAL 1 Forward Primer Lyophilized	No specific data.
	GAL 1 Reverse Primer Lyophilized	No specific data.
	GAL 10 Forward Primer Lyophilized	No specific data.
	GAL 10 Reverse Primer Lyophilized	No specific data.
	YPH 499 Yeast Strain	Adverse symptoms may include the following: irritation watering redness
	YPH 500 Yeast Strain	Adverse symptoms may include the following: irritation watering redness
Inhalation	: pESC-TRP Vector	No specific data.
	GAL 1 Forward Primer Lyophilized	No specific data.
	GAL 1 Reverse Primer Lyophilized	No specific data.
	GAL 10 Forward Primer Lyophilized	No specific data.
	GAL 10 Reverse Primer Lyophilized	No specific data.
	YPH 499 Yeast Strain	No specific data.
	YPH 500 Yeast Strain	No specific data.

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	YPH 499 Yeast Strain	No specific data.
	YPH 500 Yeast Strain	No specific data.
	YPH 501 Yeast Strain	No specific data.
Skin contact	: pESC-TRP Vector	No specific data.
	GAL 1 Forward Primer Lyophilized	No specific data.
	GAL 1 Reverse Primer Lyophilized	No specific data.
	GAL 10 Forward Primer Lyophilized	No specific data.
	GAL 10 Reverse Primer Lyophilized	No specific data.
	YPH 499 Yeast Strain	No specific data.
	YPH 500 Yeast Strain	No specific data.
	YPH 501 Yeast Strain	No specific data.
Ingestion	: pESC-TRP Vector	No specific data.
	GAL 1 Forward Primer Lyophilized	No specific data.
	GAL 1 Reverse Primer Lyophilized	No specific data.
	GAL 10 Forward Primer Lyophilized	No specific data.
	GAL 10 Reverse Primer Lyophilized	No specific data.
	YPH 499 Yeast Strain	No specific data.
	YPH 500 Yeast Strain	No specific data.
	YPH 501 Yeast Strain	No specific data.

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

Notes to physician	: pESC-TRP Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	GAL 1 Forward Primer Lyophilized	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.
	GAL 1 Reverse Primer Lyophilized	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.
	GAL 10 Forward Primer Lyophilized	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.
	GAL 10 Reverse Primer Lyophilized	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.
	YPH 499 Yeast Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	YPH 500 Yeast Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	YPH 501 Yeast Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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Specific treatments	: pESC-TRP Vector	No specific treatment.
	GAL 1 Forward Primer Lyophilized	No specific treatment.
	GAL 1 Reverse Primer Lyophilized	No specific treatment.
	GAL 10 Forward Primer Lyophilized	No specific treatment.
	GAL 10 Reverse Primer Lyophilized	No specific treatment.
	YPH 499 Yeast Strain	No specific treatment.
	YPH 500 Yeast Strain	No specific treatment.
	YPH 501 Yeast Strain	No specific treatment.
Protection of first-aiders	: pESC-TRP Vector	No action shall be taken involving any personal risk or without suitable training.
	GAL 1 Forward Primer Lyophilized	No action shall be taken involving any personal risk or without suitable training.
	GAL 1 Reverse Primer Lyophilized	No action shall be taken involving any personal risk or without suitable training.
	GAL 10 Forward Primer Lyophilized	No action shall be taken involving any personal risk or without suitable training.
	GAL 10 Reverse Primer Lyophilized	No action shall be taken involving any personal risk or without suitable training.
	YPH 499 Yeast 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.
	YPH 500 Yeast 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.
	YPH 501 Yeast 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	: pESC-TRP Vector	Use an extinguishing agent suitable for the surrounding fire.
	GAL 1 Forward Primer Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	GAL 1 Reverse Primer Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	GAL 10 Forward Primer Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	GAL 10 Reverse Primer Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	YPH 499 Yeast Strain	Use an extinguishing agent suitable for the surrounding fire.
	YPH 500 Yeast Strain	Use an extinguishing agent suitable for the surrounding fire.
	YPH 501 Yeast Strain	Use an extinguishing agent suitable for the surrounding fire.

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Unsuitable extinguishing media	: pESC-TRP Vector	None known.
	GAL 1 Forward Primer Lyophilized	None known.
	GAL 1 Reverse Primer Lyophilized	None known.
	GAL 10 Forward Primer Lyophilized	None known.
	GAL 10 Reverse Primer Lyophilized	None known.
	YPH 499 Yeast Strain	None known.
	YPH 500 Yeast Strain	None known.
	YPH 501 Yeast Strain	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: pESC-TRP Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	GAL 1 Forward Primer Lyophilized	No specific fire or explosion hazard.
	GAL 1 Reverse Primer Lyophilized	No specific fire or explosion hazard.
	GAL 10 Forward Primer Lyophilized	No specific fire or explosion hazard.
	GAL 10 Reverse Primer Lyophilized	No specific fire or explosion hazard.
	YPH 499 Yeast Strain	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: pESC-TRP Vector	No specific data.
	GAL 1 Forward Primer Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	GAL 1 Reverse Primer Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	GAL 10 Forward Primer Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	GAL 10 Reverse Primer Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	YPH 499 Yeast Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide
YPH 500 Yeast Strain	Decomposition products may include the following materials: carbon dioxide	

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YPH 501 Yeast Strain	carbon monoxide Decomposition products may include the following materials: carbon dioxide carbon monoxide
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5.3 Advice for firefighters

Special protective actions for fire-fighters

: pESC-TRP Vector	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.
GAL 1 Forward Primer Lyophilized	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.
GAL 1 Reverse Primer Lyophilized	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.
GAL 10 Forward Primer Lyophilized	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.
GAL 10 Reverse Primer Lyophilized	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.
YPH 499 Yeast 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.
YPH 500 Yeast 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.
YPH 501 Yeast 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

: pESC-TRP Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
GAL 1 Forward Primer Lyophilized	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
GAL 1 Reverse Primer Lyophilized	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
GAL 10 Forward Primer Lyophilized	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
GAL 10 Reverse Primer Lyophilized	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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YPH 499 Yeast Strain	pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
YPH 500 Yeast Strain	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
YPH 501 Yeast 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

: pESC-TRP Vector

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.

GAL 1 Forward Primer Lyophilized

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.

GAL 1 Reverse Primer Lyophilized

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.

GAL 10 Forward Primer Lyophilized

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.

GAL 10 Reverse Primer Lyophilized

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.

YPH 499 Yeast Strain

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.

YPH 500 Yeast Strain

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and

Section 6. Accidental release measures

	YPH 501 Yeast Strain	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 :	pESC-TRP Vector	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.
	GAL 1 Forward Primer Lyophilized	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".
	GAL 1 Reverse Primer Lyophilized	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".
	GAL 10 Forward Primer Lyophilized	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".
	GAL 10 Reverse Primer Lyophilized	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".
	YPH 499 Yeast Strain	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".
	YPH 500 Yeast Strain	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".
	YPH 501 Yeast Strain	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	: pESC-TRP Vector	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).
	GAL 1 Forward Primer Lyophilized	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).

Section 6. Accidental release measures

GAL 1 Reverse Primer Lyophilized	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).
GAL 10 Forward Primer Lyophilized	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).
GAL 10 Reverse Primer Lyophilized	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).
YPH 499 Yeast 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).
YPH 500 Yeast 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).
YPH 501 Yeast 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 : pESC-TRP Vector

	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.
GAL 1 Forward Primer Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
GAL 1 Reverse Primer Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
GAL 10 Forward Primer Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
GAL 10 Reverse Primer Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
YPH 499 Yeast 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

YPH 500 Yeast Strain	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.
YPH 501 Yeast 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. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures	:	pESC-TRP Vector	Put on appropriate personal protective equipment (see Section 8).
		GAL 1 Forward Primer Lyophilized	Put on appropriate personal protective equipment (see Section 8).
		GAL 1 Reverse Primer Lyophilized	Put on appropriate personal protective equipment (see Section 8).
		GAL 10 Forward Primer Lyophilized	Put on appropriate personal protective equipment (see Section 8).
		GAL 10 Reverse Primer Lyophilized	Put on appropriate personal protective equipment (see Section 8).
		YPH 499 Yeast Strain	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.
		YPH 500 Yeast Strain	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.
		YPH 501 Yeast Strain	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.

Section 7. Handling and storage

Advice on general occupational hygiene

: pESC-TRP Vector

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.

GAL 1 Forward Primer Lyophilized

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.

GAL 1 Reverse Primer Lyophilized

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.

GAL 10 Forward Primer Lyophilized

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.

GAL 10 Reverse Primer Lyophilized

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.

YPH 499 Yeast 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.

YPH 500 Yeast 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.

YPH 501 Yeast 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.

Section 7. Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

: pESC-TRP Vector

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.

GAL 1 Forward Primer Lyophilized

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.

GAL 1 Reverse Primer Lyophilized

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.

GAL 10 Forward Primer Lyophilized

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.

GAL 10 Reverse Primer Lyophilized

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.

YPH 499 Yeast Strain

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

Section 7. Handling and storage

YPH 500 Yeast Strain

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.

YPH 501 Yeast Strain

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

: pESC-TRP Vector	Industrial applications, Professional applications.
GAL 1 Forward Primer Lyophilized	Industrial applications, Professional applications.
GAL 1 Reverse Primer Lyophilized	Industrial applications, Professional applications.
GAL 10 Forward Primer Lyophilized	Industrial applications, Professional applications.
GAL 10 Reverse Primer Lyophilized	Industrial applications, Professional applications.
YPH 499 Yeast Strain	Industrial applications, Professional applications.
YPH 500 Yeast Strain	Industrial applications, Professional applications.
YPH 501 Yeast Strain	Industrial applications, Professional applications.

Industrial sector specific solutions

: pESC-TRP Vector	Not applicable.
GAL 1 Forward Primer Lyophilized	Not applicable.
GAL 1 Reverse Primer Lyophilized	Not applicable.
GAL 10 Forward Primer Lyophilized	Not applicable.
GAL 10 Reverse Primer Lyophilized	Not applicable.
YPH 499 Yeast Strain	Not applicable.
YPH 500 Yeast Strain	Not applicable.
YPH 501 Yeast Strain	Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
<p>YPH 499 Yeast Strain</p> <p>Glycerol</p>	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</p> <p>TWA: 10 mg/m³ 8 hours. Form: Total dust</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</p>

Section 8. Exposure controls/personal protection

YPH 500 Yeast Strain
Glycerol

TWA: 15 mg/m³ 8 hours. Form: Total dust

OSHA PEL 1989 (United States, 3/1989).

TWA: 5 mg/m³ 8 hours. Form: Respirable fraction

TWA: 10 mg/m³ 8 hours. Form: Total dust

OSHA PEL (United States, 6/2016).

TWA: 5 mg/m³ 8 hours. Form: Respirable fraction

TWA: 15 mg/m³ 8 hours. Form: Total dust

YPH 501 Yeast Strain
Glycerol

OSHA PEL 1989 (United States, 3/1989).

TWA: 5 mg/m³ 8 hours. Form: Respirable fraction

TWA: 10 mg/m³ 8 hours. Form: Total dust

OSHA PEL (United States, 6/2016).

TWA: 5 mg/m³ 8 hours. Form: Respirable fraction

TWA: 15 mg/m³ 8 hours. Form: Total dust

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.

Section 8. Exposure controls/personal protection

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

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	pESC-TRP Vector	Liquid.
		GAL 1 Forward Primer Lyophilized	Solid.
		GAL 1 Reverse Primer Lyophilized	Solid.
		GAL 10 Forward Primer Lyophilized	Solid.
		GAL 10 Reverse Primer Lyophilized	Solid.
		YPH 499 Yeast Strain	Liquid.
		YPH 500 Yeast Strain	Liquid.
		YPH 501 Yeast Strain	Liquid.
Color	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
Odor	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
Odor threshold	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
pH	:	pESC-TRP Vector	7.5
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.

Section 9. Physical and chemical properties

	YPH 500 Yeast Strain	Not available.
	YPH 501 Yeast Strain	Not available.
Melting point	: pESC-TRP Vector	0°C (32°F)
	GAL 1 Forward Primer Lyophilized	Not available.
	GAL 1 Reverse Primer Lyophilized	Not available.
	GAL 10 Forward Primer Lyophilized	Not available.
	GAL 10 Reverse Primer Lyophilized	Not available.
	YPH 499 Yeast Strain	Not available.
	YPH 500 Yeast Strain	Not available.
	YPH 501 Yeast Strain	Not available.
Boiling point	: pESC-TRP Vector	100°C (212°F)
	GAL 1 Forward Primer Lyophilized	Not available.
	GAL 1 Reverse Primer Lyophilized	Not available.
	GAL 10 Forward Primer Lyophilized	Not available.
	GAL 10 Reverse Primer Lyophilized	Not available.
	YPH 499 Yeast Strain	Not available.
	YPH 500 Yeast Strain	Not available.
	YPH 501 Yeast Strain	Not available.
Flash point	: pESC-TRP Vector	Not available.
	GAL 1 Forward Primer Lyophilized	Not available.
	GAL 1 Reverse Primer Lyophilized	Not available.
	GAL 10 Forward Primer Lyophilized	Not available.
	GAL 10 Reverse Primer Lyophilized	Not available.
	YPH 499 Yeast Strain	Not available.
	YPH 500 Yeast Strain	Not available.
	YPH 501 Yeast Strain	Not available.
Evaporation rate	: pESC-TRP Vector	Not available.
	GAL 1 Forward Primer Lyophilized	Not available.
	GAL 1 Reverse Primer Lyophilized	Not available.
	GAL 10 Forward Primer Lyophilized	Not available.
	GAL 10 Reverse Primer Lyophilized	Not available.
	YPH 499 Yeast Strain	Not available.
	YPH 500 Yeast Strain	Not available.
	YPH 501 Yeast Strain	Not available.
Flammability (solid, gas)	: pESC-TRP Vector	Not applicable.
	GAL 1 Forward Primer Lyophilized	Not available.
	GAL 1 Reverse Primer Lyophilized	Not available.
	GAL 10 Forward Primer Lyophilized	Not available.
	GAL 10 Reverse Primer Lyophilized	Not available.
	YPH 499 Yeast Strain	Not applicable.
	YPH 500 Yeast Strain	Not applicable.
	YPH 501 Yeast Strain	Not applicable.

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
Vapor pressure	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
Vapor density	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
Relative density	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
Solubility	:	pESC-TRP Vector	Easily soluble in the following materials: cold water and hot water.
		GAL 1 Forward Primer Lyophilized	Soluble in the following materials: cold water and hot water.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Soluble in the following materials: cold water and hot water.
		GAL 10 Reverse Primer Lyophilized	Soluble in the following materials: cold water and hot water.
		YPH 499 Yeast Strain	Soluble in the following materials: cold water and hot water.
		YPH 500 Yeast Strain	Soluble in the following materials: cold water and hot water.
		YPH 501 Yeast Strain	Soluble in the following materials: cold water and hot water.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
Auto-ignition temperature	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
Decomposition temperature	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
Viscosity	:	pESC-TRP Vector	Not available.
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	:	pESC-TRP Vector	No specific test data related to reactivity available for this product or its ingredients.
		GAL 1 Forward Primer Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
		GAL 1 Reverse Primer Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
		GAL 10 Forward Primer Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
		GAL 10 Reverse Primer Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
		YPH 499 Yeast Strain	No specific test data related to reactivity available for this product or its ingredients.
		YPH 500 Yeast Strain	No specific test data related to reactivity available for this product or its ingredients.
		YPH 501 Yeast Strain	No specific test data related to reactivity available

Section 10. Stability and reactivity

for this product or its ingredients.

10.2 Chemical stability	<ul style="list-style-type: none"> : pESC-TRP Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain 	<ul style="list-style-type: none"> The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	<ul style="list-style-type: none"> : pESC-TRP Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain 	<ul style="list-style-type: none"> Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	<ul style="list-style-type: none"> : pESC-TRP Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain 	<ul style="list-style-type: none"> No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
10.5 Incompatible materials	<ul style="list-style-type: none"> : pESC-TRP Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain 	<ul style="list-style-type: none"> May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity

10.6 Hazardous decomposition products

: pESC-TRP Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
GAL 1 Forward Primer Lyophilized	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
GAL 1 Reverse Primer Lyophilized	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
GAL 10 Forward Primer Lyophilized	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
GAL 10 Reverse Primer Lyophilized	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
YPH 499 Yeast Strain	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
YPH 500 Yeast Strain	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
YPH 501 Yeast 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
YPH 499 Yeast Strain Glycerol	LD50 Oral	Rat	12600 mg/kg	-
YPH 500 Yeast Strain Glycerol	LD50 Oral	Rat	12600 mg/kg	-
YPH 501 Yeast Strain Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
YPH 499 Yeast Strain Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-		24 hours 500 milligrams
YPH 500 Yeast Strain Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-		24 hours 500 milligrams
YPH 501 Yeast Strain Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Section 11. Toxicological information

	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
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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

: pESC-TRP Vector	Not available.
GAL 1 Forward Primer Lyophilized	Not available.
GAL 1 Reverse Primer Lyophilized	Not available.
GAL 10 Forward Primer Lyophilized	Not available.
GAL 10 Reverse Primer Lyophilized	Not available.
YPH 499 Yeast Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.
YPH 500 Yeast Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.
YPH 501 Yeast Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact

: pESC-TRP Vector	No known significant effects or critical hazards.
GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
YPH 499 Yeast Strain	Causes eye irritation.
YPH 500 Yeast Strain	Causes eye irritation.
YPH 501 Yeast Strain	Causes eye irritation.

Section 11. Toxicological information

Inhalation	:	pESC-TRP Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		YPH 499 Yeast Strain	No known significant effects or critical hazards.
Skin contact	:	pESC-TRP Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		YPH 499 Yeast Strain	No known significant effects or critical hazards.
Ingestion	:	pESC-TRP Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.	
	YPH 501 Yeast Strain	No known significant effects or critical hazards.	

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:	pESC-TRP Vector	No specific data.
		GAL 1 Forward Primer Lyophilized	No specific data.
		GAL 1 Reverse Primer Lyophilized	No specific data.
		GAL 10 Forward Primer Lyophilized	No specific data.
		GAL 10 Reverse Primer Lyophilized	No specific data.
		YPH 499 Yeast Strain	Adverse symptoms may include the following: irritation watering redness
	YPH 500 Yeast Strain	Adverse symptoms may include the following: irritation watering redness	
	YPH 501 Yeast Strain	Adverse symptoms may include the following: irritation watering redness	
Inhalation	:	pESC-TRP Vector	No specific data.
		GAL 1 Forward Primer Lyophilized	No specific data.
		GAL 1 Reverse Primer Lyophilized	No specific data.
		GAL 10 Forward Primer Lyophilized	No specific data.
		GAL 10 Reverse Primer Lyophilized	No specific data.

Section 11. Toxicological information

	YPH 499 Yeast Strain	No specific data.
	YPH 500 Yeast Strain	No specific data.
	YPH 501 Yeast Strain	No specific data.
Skin contact	: pESC-TRP Vector	No specific data.
	GAL 1 Forward Primer Lyophilized	No specific data.
	GAL 1 Reverse Primer Lyophilized	No specific data.
	GAL 10 Forward Primer Lyophilized	No specific data.
	GAL 10 Reverse Primer Lyophilized	No specific data.
	YPH 499 Yeast Strain	No specific data.
	YPH 500 Yeast Strain	No specific data.
	YPH 501 Yeast Strain	No specific data.
Ingestion	: pESC-TRP Vector	No specific data.
	GAL 1 Forward Primer Lyophilized	No specific data.
	GAL 1 Reverse Primer Lyophilized	No specific data.
	GAL 10 Forward Primer Lyophilized	No specific data.
	GAL 10 Reverse Primer Lyophilized	No specific data.
	YPH 499 Yeast Strain	No specific data.
	YPH 500 Yeast Strain	No specific data.
	YPH 501 Yeast 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	: pESC-TRP Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
	YPH 501 Yeast Strain	No known significant effects or critical hazards.
Carcinogenicity	: pESC-TRP Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
	YPH 501 Yeast Strain	No known significant effects or critical hazards.

Section 11. Toxicological information

Mutagenicity	: pESC-TRP Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
Teratogenicity	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
	YPH 501 Yeast Strain	No known significant effects or critical hazards.
	: pESC-TRP Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
Developmental effects	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
Fertility effects	YPH 501 Yeast Strain	No known significant effects or critical hazards.
	: pESC-TRP Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
	YPH 501 Yeast Strain	No known significant effects or critical hazards.
		No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

12.1 Toxicity

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
YPH 499 Yeast Strain Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
YPH 500 Yeast Strain Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
YPH 501 Yeast Strain Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
YPH 499 Yeast Strain Glycerol	-1.76	-	low
YPH 500 Yeast Strain Glycerol	-1.76	-	low
YPH 501 Yeast 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. 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

Section 13. Disposal considerations

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)**: Not determined.
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

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
YPH 499 Yeast Strain Glycerol	≥10 - ≤25	No.	No.	No.	Yes.	No.
YPH 500 Yeast Strain Glycerol	≥10 - ≤25	No.	No.	No.	Yes.	No.
YPH 501 Yeast Strain Glycerol	≥10 - ≤25	No.	No.	No.	Yes.	No.

State regulations

Massachusetts : The following components are listed: 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: 1,2,3-PROPANETRIOL

California Prop. 65

Section 15. Regulatory information

No products were found.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

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

Section 16. Other information

History

Date of issue : 03/30/2017

Date of previous issue : 11/05/2014.

Version : 3

Indicates information that has changed from previously issued version.

Notice to reader

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