

SAFETY DATA SHEET



AdEasy XL Adenoviral Vector System Kit, Part Number 240010

Section 1. Identification

1.1 Product identifier

Product name : AdEasy XL Adenoviral Vector System Kit, Part Number 240010
Part No. (Chemical Kit) : 240010
Part No. : AD-293 Cell Line >1 x 10e6 Viable Cells 240085-41
 pShuttle Vector 240006-51
 pShuttle-CMV Vector 240007-51
 pShuttle-CMV-lacZ Control Vector 240008-51
 BJ5183-AD-1 electroporation competent cells 200157-41
 XL10-Gold Ultracompetent cells 200315-41
 XL10-Gold 2-Mercaptoethanol 200314-43
 pUC 18 DNA Control Plasmid 200231-42
 Transformation Control 200157-42

Validation date : 3/28/2017

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

Material uses : Analytical reagent.
 AD-293 Cell Line >1 x 10e6 Viable Cells 1 ml
 pShuttle Vector 0.02 ml (20 µg 1 µg/µl)
 pShuttle-CMV Vector 0.02 ml (20 µg 1 µg/µl)
 pShuttle-CMV-lacZ Control Vector 0.01 ml (10 µg 1 µg/µl)
 BJ5183-AD-1 electroporation competent cells 0.5 ml
 XL10-Gold Ultracompetent cells 0.5 ml
 XL10-Gold 2-Mercaptoethanol 0.05 ml
 pUC 18 DNA Control Plasmid 0.01 ml (0.1 ng/µl)
 Transformation Control 0.01 ml (0.1 ng/µl 10 µl)

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 : AD-293 Cell Line >1 x 10e6 Viable Cells This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). 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.
 pShuttle Vector
 pShuttle-CMV 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

Section 2. Hazards identification

pShuttle-CMV-lacZ Control Vector	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.
BJ5183-AD-1 electroporation competent cells	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.
XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). 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.
Transformation Control	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.

Classification of the substance or mixture

AD-293 Cell Line >1 x 10e6

Viable Cells

H320 EYE IRRITATION - Category 2B

XL10-Gold Ultracompetent cells

H320 EYE IRRITATION - Category 2B

XL10-Gold 2-Mercaptoethanol

H318 SERIOUS EYE DAMAGE - Category 1
H317 SKIN SENSITIZATION - Category 1

2.2 GHS label elements

Hazard pictograms



Signal word

: AD-293 Cell Line >1 x 10e6 Viable Cells Warning
pShuttle Vector No signal word.
pShuttle-CMV Vector No signal word.
pShuttle-CMV-lacZ Control Vector No signal word.
BJ5183-AD-1 electroporation competent cells No signal word.
XL10-Gold Ultracompetent cells Warning
XL10-Gold 2-Mercaptoethanol Danger

Section 2. Hazards identification

Hazard statements	pUC 18 DNA Control Plasmid Transformation Control	No signal word. No signal word.
	: AD-293 Cell Line >1 x 10e6 Viable Cells	H320 - Causes eye irritation.
	pShuttle Vector	No known significant effects or critical hazards.
	pShuttle-CMV Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
Precautionary statements	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	H320 - Causes eye irritation.
	XL10-Gold 2-Mercaptoethanol	GHS SYMBOL - Corrosion - Exclamation mark - H318 - Causes serious eye damage. H317 - May cause an allergic skin reaction.
	pUC 18 DNA Control Plasmid Transformation Control	No known significant effects or critical hazards. No known significant effects or critical hazards.
	Prevention	: AD-293 Cell Line >1 x 10e6 Viable Cells
pShuttle Vector		Not applicable.
pShuttle-CMV Vector		Not applicable.
pShuttle-CMV-lacZ Control Vector		Not applicable.
BJ5183-AD-1 electroporation competent cells		Not applicable.
Response	XL10-Gold Ultracompetent cells	P264 - Wash hands thoroughly after handling. P280 - Wear protective gloves. Wear eye or face protection. P261 - Avoid breathing vapor. P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace.
	XL10-Gold 2-Mercaptoethanol	Not applicable. Not applicable.
	pUC 18 DNA Control Plasmid Transformation Control	Not applicable. Not applicable.
	: AD-293 Cell Line >1 x 10e6 Viable Cells	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.
	pShuttle Vector	Not applicable.
Response	pShuttle-CMV Vector	Not applicable.
	pShuttle-CMV-lacZ Control Vector	Not applicable.
	BJ5183-AD-1 electroporation competent cells	Not applicable.
	XL10-Gold Ultracompetent cells	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.
	XL10-Gold 2-Mercaptoethanol	P302 + P352 + P363 - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

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	pUC 18 DNA Control Plasmid	Not applicable.
	Transformation Control	Not applicable.
Storage	: AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.
	pShuttle Vector	Not applicable.
	pShuttle-CMV Vector	Not applicable.
	pShuttle-CMV-lacZ Control Vector	Not applicable.
	BJ5183-AD-1 electroporation competent cells	Not applicable.
	XL10-Gold Ultracompetent cells	Not applicable.
	XL10-Gold 2-Mercaptoethanol	Not applicable.
	pUC 18 DNA Control Plasmid	Not applicable.
	Transformation Control	Not applicable.
Disposal	: AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.
	pShuttle Vector	Not applicable.
	pShuttle-CMV Vector	Not applicable.
	pShuttle-CMV-lacZ Control Vector	Not applicable.
	BJ5183-AD-1 electroporation competent cells	Not applicable.
	XL10-Gold Ultracompetent cells	Not applicable.
	XL10-Gold 2-Mercaptoethanol	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	pUC 18 DNA Control Plasmid	Not applicable.
	Transformation Control	Not applicable.
Supplemental label elements	: AD-293 Cell Line >1 x 10e6 Viable Cells	None known.
	pShuttle Vector	None known.
	pShuttle-CMV Vector	None known.
	pShuttle-CMV-lacZ Control Vector	None known.
	BJ5183-AD-1 electroporation competent cells	None known.
	XL10-Gold Ultracompetent cells	None known.
	XL10-Gold 2-Mercaptoethanol	None known.
	pUC 18 DNA Control Plasmid	None known.
	Transformation Control	None known.
2.3 Other hazards		
Hazards not otherwise classified	: AD-293 Cell Line >1 x 10e6 Viable Cells	None known.
	pShuttle Vector	None known.
	pShuttle-CMV Vector	None known.
	pShuttle-CMV-lacZ Control Vector	None known.
	BJ5183-AD-1 electroporation competent cells	None known.
	XL10-Gold Ultracompetent cells	None known.
	XL10-Gold 2-Mercaptoethanol	None known.
	pUC 18 DNA Control Plasmid	None known.
	Transformation Control	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: AD-293 Cell Line >1 x 10e6 Viable Cells	Mixture
	pShuttle Vector	Mixture
	pShuttle-CMV Vector	Mixture
	pShuttle-CMV-lacZ Control Vector	Mixture
	BJ5183-AD-1 electroporation competent cells	Mixture
	XL10-Gold Ultracompetent cells	Mixture
	XL10-Gold 2-Mercaptoethanol	Mixture
	pUC 18 DNA Control Plasmid	Mixture
	Transformation Control	Mixture

Ingredient name	%	CAS number
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	≥10 - ≤25	67-68-5
BJ5183-AD-1 electroporation competent cells Glycerol	<10	56-81-5
XL10-Gold Ultracompetent cells Glycerol	≥10 - ≤25	56-81-5
Dimethyl sulfoxide	≤10	67-68-5
Potassium chloride	≤3	7447-40-7
XL10-Gold 2-Mercaptoethanol Sodium chloride	≥10 - ≤25	7647-14-5
2-Mercaptoethanol	≤5	60-24-2

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	: AD-293 Cell Line >1 x 10e6 Viable Cells	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.
	pShuttle 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.
	pShuttle-CMV 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.
	pShuttle-CMV-lacZ Control 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.
	BJ5183-AD-1 electroporation competent cells	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get

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	XL10-Gold Ultracompetent cells	medical attention if irritation occurs. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
	XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.
	pUC 18 DNA Control Plasmid	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Transformation Control	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	: AD-293 Cell Line >1 x 10e6 Viable Cells	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.
	pShuttle Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pShuttle-CMV Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pShuttle-CMV-lacZ Control Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	BJ5183-AD-1 electroporation competent cells	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	XL10-Gold Ultracompetent cells	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.
	XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air

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and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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.

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact

: AD-293 Cell Line >1 x 10e6 Viable Cells	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.
pShuttle Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
pShuttle-CMV Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
pShuttle-CMV-lacZ Control Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
BJ5183-AD-1 electroporation competent cells	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
XL10-Gold Ultracompetent cells	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.
XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
pUC 18 DNA Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Transformation Control	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Section 4. First aid measures

Ingestion	: AD-293 Cell Line >1 x 10e6 Viable Cells	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.
	pShuttle 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.
	pShuttle-CMV 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.
	pShuttle-CMV-lacZ Control 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.
	BJ5183-AD-1 electroporation competent cells	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	XL10-Gold Ultracompetent cells	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,

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XL10-Gold 2-Mercaptoethanol	belt or waistband. Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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.
pUC 18 DNA Control Plasmid	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Transformation Control	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

: AD-293 Cell Line >1 x 10e6 Viable Cells	Causes eye irritation.
pShuttle Vector	No known significant effects or critical hazards.
pShuttle-CMV Vector	No known significant effects or critical hazards.
pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
XL10-Gold Ultracompetent cells	Causes eye irritation.
XL10-Gold 2-Mercaptoethanol	Causes serious eye damage.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.

Inhalation

: AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
pShuttle Vector	No known significant effects or critical hazards.
pShuttle-CMV Vector	No known significant effects or critical hazards.
pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.

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Skin contact	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. May cause an allergic skin reaction. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<u>Over-exposure signs/symptoms</u>		
Eye contact	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Adverse symptoms may include the following: irritation watering redness No specific data. No specific data. No specific data. No specific data. Adverse symptoms may include the following: irritation watering redness Adverse symptoms may include the following: pain watering redness No specific data. No specific data.
Inhalation	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.

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Skin contact	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. Adverse symptoms may include the following: stomach pains No specific data. No specific data.

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

Notes to physician	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
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Specific treatments	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment.
Protection of first-aiders	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	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. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
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Section 5. Fire-fighting measures

	pUC 18 DNA Control Plasmid	surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
	Transformation Control	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: AD-293 Cell Line >1 x 10e6 Viable Cells	None known.
	pShuttle Vector	None known.
	pShuttle-CMV Vector	None known.
	pShuttle-CMV-lacZ Control Vector	None known.
	BJ5183-AD-1 electroporation competent cells	None known.
	XL10-Gold Ultracompetent cells	None known.
	XL10-Gold 2-Mercaptoethanol	None known.
	pUC 18 DNA Control Plasmid	None known.
	Transformation Control	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: AD-293 Cell Line >1 x 10e6 Viable Cells	In a fire or if heated, a pressure increase will occur and the container may burst.
	pShuttle Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	pShuttle-CMV Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	pShuttle-CMV-lacZ Control Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	BJ5183-AD-1 electroporation competent cells	In a fire or if heated, a pressure increase will occur and the container may burst.
	XL10-Gold Ultracompetent cells	In a fire or if heated, a pressure increase will occur and the container may burst.
	XL10-Gold 2-Mercaptoethanol	In a fire or if heated, a pressure increase will occur and the container may burst.
	pUC 18 DNA Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst.
	Transformation Control	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: AD-293 Cell Line >1 x 10e6 Viable Cells	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	pShuttle Vector	No specific data.
	pShuttle-CMV Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	BJ5183-AD-1 electroporation competent cells	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	XL10-Gold Ultracompetent cells	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
	XL10-Gold 2-Mercaptoethanol	Decomposition products may include the following materials: carbon dioxide

Section 5. Fire-fighting measures

carbon monoxide
sulfur oxides
halogenated compounds
metal oxide/oxides
No specific data.
No specific data.

pUC 18 DNA Control Plasmid
Transformation Control

5.3 Advice for firefighters

Special protective actions for fire-fighters

: AD-293 Cell Line >1 x 10e6
Viable Cells

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

pShuttle 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.

pShuttle-CMV 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.

pShuttle-CMV-lacZ Control 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.

BJ5183-AD-1 electroporation
competent cells

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

XL10-Gold Ultracompetent cells

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

XL10-Gold 2-Mercaptoethanol

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.

pUC 18 DNA Control Plasmid

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Transformation Control

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

: AD-293 Cell Line >1 x 10e6
Viable Cells

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

pShuttle Vector

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

pShuttle-CMV Vector

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

pShuttle-CMV-lacZ Control Vector

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus

Section 5. Fire-fighting measures

BJ5183-AD-1 electroporation competent cells	(SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
XL10-Gold Ultracompetent cells	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
XL10-Gold 2-Mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
pUC 18 DNA Control Plasmid	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Transformation Control	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

: AD-293 Cell Line >1 x 10e6 Viable Cells	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
pShuttle 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.
pShuttle-CMV 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.
pShuttle-CMV-lacZ Control 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.
BJ5183-AD-1 electroporation competent cells	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

XL10-Gold Ultracompetent cells	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
XL10-Gold 2-Mercaptoethanol	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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
pUC 18 DNA Control Plasmid	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
Transformation Control	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 : AD-293 Cell Line >1 x 10e6 Viable Cells	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
pShuttle Vector	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".
pShuttle-CMV Vector	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".
pShuttle-CMV-lacZ Control Vector	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".
BJ5183-AD-1 electroporation competent cells	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
XL10-Gold Ultracompetent cells	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
XL10-Gold 2-Mercaptoethanol	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".
pUC 18 DNA Control Plasmid	If specialized clothing is required to deal with the

Section 6. Accidental release measures

	Transformation Control	spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions	: AD-293 Cell Line >1 x 10e6 Viable Cells	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	pShuttle 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).
	pShuttle-CMV 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).
	pShuttle-CMV-lacZ Control 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).
	BJ5183-AD-1 electroporation competent cells	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	XL10-Gold Ultracompetent cells	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	XL10-Gold 2-Mercaptoethanol	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).
	pUC 18 DNA 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).
	Transformation Control	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

Section 6. Accidental release measures

Methods for cleaning up	: AD-293 Cell Line >1 x 10e6 Viable Cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	pShuttle 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.
	pShuttle-CMV 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.
	pShuttle-CMV-lacZ Control 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.
	BJ5183-AD-1 electroporation competent cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	XL10-Gold Ultracompetent cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	XL10-Gold 2-Mercaptoethanol	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	pUC 18 DNA Control Plasmid	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Transformation Control	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	: AD-293 Cell Line >1 x 10e6 Viable Cells	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	pShuttle Vector	Put on appropriate personal protective equipment (see Section 8).
	pShuttle-CMV Vector	Put on appropriate personal protective equipment (see Section 8).
	pShuttle-CMV-lacZ Control Vector	Put on appropriate personal protective equipment (see Section 8).
	BJ5183-AD-1 electroporation competent cells	Put on appropriate personal protective equipment (see Section 8).
	XL10-Gold Ultracompetent cells	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	XL10-Gold 2-Mercaptoethanol	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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.
	pUC 18 DNA Control Plasmid	Put on appropriate personal protective equipment (see Section 8).
	Transformation Control	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: AD-293 Cell Line >1 x 10e6 Viable Cells	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	pShuttle 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.
	pShuttle-CMV Vector	Eating, drinking and smoking should be prohibited

Section 7. Handling and storage

pShuttle-CMV-lacZ Control Vector	in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
BJ5183-AD-1 electroporation competent cells	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
XL10-Gold Ultracompetent cells	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
XL10-Gold 2-Mercaptoethanol	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
pUC 18 DNA Control Plasmid	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Transformation Control	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

: AD-293 Cell Line >1 x 10e6 Viable Cells	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled
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Section 7. Handling and storage

pShuttle Vector	<p>containers. Use appropriate containment to avoid environmental contamination.</p> <p>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.</p>
pShuttle-CMV Vector	<p>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.</p>
pShuttle-CMV-lacZ Control Vector	<p>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.</p>
BJ5183-AD-1 electroporation competent cells	<p>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.</p>
XL10-Gold Ultracompetent cells	<p>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.</p>
XL10-Gold 2-Mercaptoethanol	<p>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. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed</p>

Section 7. Handling and storage

pUC 18 DNA Control Plasmid	and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Transformation Control	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

: AD-293 Cell Line >1 x 10e6 Viable Cells	Industrial applications, Professional applications.
pShuttle Vector	Industrial applications, Professional applications.
pShuttle-CMV Vector	Industrial applications, Professional applications.
pShuttle-CMV-lacZ Control Vector	Industrial applications, Professional applications.
BJ5183-AD-1 electroporation competent cells	Industrial applications, Professional applications.
XL10-Gold Ultracompetent cells	Industrial applications, Professional applications.
XL10-Gold 2-Mercaptoethanol	Industrial applications, Professional applications.
pUC 18 DNA Control Plasmid	Industrial applications, Professional applications.
Transformation Control	Industrial applications, Professional applications.

Industrial sector specific solutions

: AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.
pShuttle Vector	Not applicable.
pShuttle-CMV Vector	Not applicable.
pShuttle-CMV-lacZ Control Vector	Not applicable.
BJ5183-AD-1 electroporation competent cells	Not applicable.
XL10-Gold Ultracompetent cells	Not applicable.
XL10-Gold 2-Mercaptoethanol	Not applicable.
pUC 18 DNA Control Plasmid	Not applicable.
Transformation Control	Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	AIHA WEEL (United States, 10/2011). TWA: 250 ppm 8 hours.
BJ5183-AD-1 electroporation competent cells Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction
XL10-Gold Ultracompetent cells Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Total dust
Dimethyl sulfoxide	OSHA PEL (United States, 6/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction
Potassium chloride	TWA: 15 mg/m ³ 8 hours. Form: Total dust
XL10-Gold 2-Mercaptoethanol Sodium chloride	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction
2-Mercaptoethanol	OSHA PEL (United States, 6/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction
Dimethyl sulfoxide	TWA: 15 mg/m ³ 8 hours. Form: Total dust
Potassium chloride	AIHA WEEL (United States, 10/2011). TWA: 250 ppm 8 hours.
XL10-Gold 2-Mercaptoethanol Sodium chloride	None.
2-Mercaptoethanol	AIHA WEEL (United States, 10/2011). Absorbed through skin. TWA: 0.2 ppm 8 hours.

8.2 Exposure controls

Appropriate engineering controls

- : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

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

Individual protection measures

Hygiene measures

- : Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. 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: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Section 8. Exposure controls/personal protection

Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : AD-293 Cell Line >1 x 10e6 Viable Cells Liquid.
 pShuttle Vector Liquid.
 pShuttle-CMV Vector Liquid.
 pShuttle-CMV-lacZ Control Vector Liquid.
 BJ5183-AD-1 electroporation competent cells Liquid.
 XL10-Gold Ultracompetent cells Liquid.
 XL10-Gold 2-Mercaptoethanol Liquid.
 pUC 18 DNA Control Plasmid Transformation Control Liquid.
- Color** : AD-293 Cell Line >1 x 10e6 Viable Cells Not available.
 pShuttle Vector Not available.
 pShuttle-CMV Vector Not available.
 pShuttle-CMV-lacZ Control Vector Not available.
 BJ5183-AD-1 electroporation competent cells Not available.
 XL10-Gold Ultracompetent cells Not available.
 XL10-Gold 2-Mercaptoethanol Not available.
 pUC 18 DNA Control Plasmid Transformation Control Not available.
- Odor** : AD-293 Cell Line >1 x 10e6 Viable Cells Not available.
 pShuttle Vector Not available.
 pShuttle-CMV Vector Not available.
 pShuttle-CMV-lacZ Control Vector Not available.
 BJ5183-AD-1 electroporation competent cells Not available.
 XL10-Gold Ultracompetent cells Not available.
 XL10-Gold 2-Mercaptoethanol Not available.
 pUC 18 DNA Control Plasmid Transformation Control Not available.

Section 9. Physical and chemical properties

Odor threshold	: AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
	pShuttle Vector	Not available.
	pShuttle-CMV Vector	Not available.
	pShuttle-CMV-lacZ Control Vector	Not available.
	BJ5183-AD-1 electroporation competent cells	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	Transformation Control	Not available.
	pH	: AD-293 Cell Line >1 x 10e6 Viable Cells
pShuttle Vector		7.5
pShuttle-CMV Vector		7.5
pShuttle-CMV-lacZ Control Vector		7.5
BJ5183-AD-1 electroporation competent cells		Not available.
XL10-Gold Ultracompetent cells		6.4
XL10-Gold 2-Mercaptoethanol		Not available.
pUC 18 DNA Control Plasmid		7.5
Transformation Control		7.5
Melting point		: AD-293 Cell Line >1 x 10e6 Viable Cells
	pShuttle Vector	0°C (32°F)
	pShuttle-CMV Vector	0°C (32°F)
	pShuttle-CMV-lacZ Control Vector	0°C (32°F)
	BJ5183-AD-1 electroporation competent cells	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	0°C (32°F)
	Transformation Control	0°C (32°F)
	Boiling point	: AD-293 Cell Line >1 x 10e6 Viable Cells
pShuttle Vector		100°C (212°F)
pShuttle-CMV Vector		100°C (212°F)
pShuttle-CMV-lacZ Control Vector		100°C (212°F)
BJ5183-AD-1 electroporation competent cells		Not available.
XL10-Gold Ultracompetent cells		Not available.
XL10-Gold 2-Mercaptoethanol		Not available.
pUC 18 DNA Control Plasmid		100°C (212°F)
Transformation Control		100°C (212°F)
Flash point		: AD-293 Cell Line >1 x 10e6 Viable Cells
	pShuttle Vector	Not available.
	pShuttle-CMV Vector	Not available.
	pShuttle-CMV-lacZ Control Vector	Not available.
	BJ5183-AD-1 electroporation competent cells	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	Transformation Control	Not available.

Section 9. Physical and chemical properties

Evaporation rate	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Flammability (solid, gas)	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Lower and upper explosive (flammable) limits	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Vapor pressure	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Vapor density	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.

Section 9. Physical and chemical properties

Relative density	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Solubility	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Auto-ignition temperature	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Decomposition temperature	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells	Not available. Not available. Not available. Not available. Not available.

Section 9. Physical and chemical properties

	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	Transformation Control	Not available.
Viscosity	: AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
	pShuttle Vector	Not available.
	pShuttle-CMV Vector	Not available.
	pShuttle-CMV-lacZ Control Vector	Not available.
	BJ5183-AD-1 electroporation competent cells	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	Transformation Control	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: AD-293 Cell Line >1 x 10e6 Viable Cells	No specific test data related to reactivity available for this product or its ingredients.
	pShuttle Vector	No specific test data related to reactivity available for this product or its ingredients.
	pShuttle-CMV Vector	No specific test data related to reactivity available for this product or its ingredients.
	pShuttle-CMV-lacZ Control Vector	No specific test data related to reactivity available for this product or its ingredients.
	BJ5183-AD-1 electroporation competent cells	No specific test data related to reactivity available for this product or its ingredients.
	XL10-Gold Ultracompetent cells	No specific test data related to reactivity available for this product or its ingredients.
	XL10-Gold 2-Mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.
	pUC 18 DNA Control Plasmid	No specific test data related to reactivity available for this product or its ingredients.
	Transformation Control	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: AD-293 Cell Line >1 x 10e6 Viable Cells	The product is stable.
	pShuttle Vector	The product is stable.
	pShuttle-CMV Vector	The product is stable.
	pShuttle-CMV-lacZ Control Vector	The product is stable.
	BJ5183-AD-1 electroporation competent cells	The product is stable.
	XL10-Gold Ultracompetent cells	The product is stable.
	XL10-Gold 2-Mercaptoethanol	The product is stable.
	pUC 18 DNA Control Plasmid	The product is stable.
	Transformation Control	The product is stable.
10.3 Possibility of hazardous reactions	: AD-293 Cell Line >1 x 10e6 Viable Cells	Under normal conditions of storage and use, hazardous reactions will not occur.
	pShuttle Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	pShuttle-CMV Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	pShuttle-CMV-lacZ Control Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	BJ5183-AD-1 electroporation	Under normal conditions of storage and use,

Section 10. Stability and reactivity

competent cells	hazardous reactions will not occur.
XL10-Gold Ultracompetent cells	Under normal conditions of storage and use, hazardous reactions will not occur.
XL10-Gold 2-Mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
Transformation Control	Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid	: AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
	pShuttle Vector	No specific data.
	pShuttle-CMV Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	BJ5183-AD-1 electroporation competent cells	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	Transformation Control	No specific data.

10.5 Incompatible materials	: AD-293 Cell Line >1 x 10e6 Viable Cells	May react or be incompatible with oxidizing materials.
	pShuttle Vector	May react or be incompatible with oxidizing materials.
	pShuttle-CMV Vector	May react or be incompatible with oxidizing materials.
	pShuttle-CMV-lacZ Control Vector	May react or be incompatible with oxidizing materials.
	BJ5183-AD-1 electroporation competent cells	May react or be incompatible with oxidizing materials.
	XL10-Gold Ultracompetent cells	May react or be incompatible with oxidizing materials.
	XL10-Gold 2-Mercaptoethanol	May react or be incompatible with oxidizing materials.
	pUC 18 DNA Control Plasmid	May react or be incompatible with oxidizing materials.
	Transformation Control	May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products	: AD-293 Cell Line >1 x 10e6 Viable Cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pShuttle Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pShuttle-CMV Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pShuttle-CMV-lacZ Control Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	BJ5183-AD-1 electroporation competent cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	XL10-Gold Ultracompetent cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 10. Stability and reactivity

XL10-Gold 2-Mercaptoethanol	produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.
pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Transformation Control	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
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	LD50 Dermal LD50 Oral	Rat Rat	40000 mg/kg 14500 mg/kg	- -
BJ5183-AD-1 electroporation competent cells Glycerol	LD50 Oral	Rat	12600 mg/kg	-
XL10-Gold Ultracompetent cells Glycerol Dimethyl sulfoxide	LD50 Oral LD50 Dermal LD50 Oral	Rat Rat Rat	12600 mg/kg 40000 mg/kg 14500 mg/kg	- - -
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
XL10-Gold 2-Mercaptoethanol Sodium chloride 2-Mercaptoethanol	LD50 Oral LD50 Dermal LD50 Oral	Rat Rabbit Rat	3000 mg/kg 200 mg/kg 244 mg/kg	- - -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	Eyes - Mild irritant Eyes - Mild irritant Skin - Mild irritant Skin - Mild irritant	Rabbit Rabbit Rabbit Rabbit	- - - -	24 hours 500 milligrams 100 milligrams 24 hours 500 milligrams 100 milligrams	- - - -
BJ5183-AD-1 electroporation competent cells Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Section 11. Toxicological information

XL10-Gold Ultracompetent cells	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Dimethyl sulfoxide	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Potassium chloride	Skin - Mild irritant	Rabbit	-	100 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	XL10-Gold 2-Mercaptoethanol				
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
2-Mercaptoethanol	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Severe irritant	Rabbit	-	2 milligrams	-

Sensitization

Not available.

Conclusion/Summary

Skin :  May cause skin sensitization.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on the likely routes of exposure	<ul style="list-style-type: none"> : AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control 	<ul style="list-style-type: none"> Routes of entry anticipated: Oral, Dermal, Inhalation. Not available. Not available. Not available. Not available. Routes of entry anticipated: Oral, Dermal, Inhalation. Routes of entry anticipated: Oral, Dermal, Inhalation. Not available. Not available.
Potential acute health effects		
Eye contact	<ul style="list-style-type: none"> : AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control 	<ul style="list-style-type: none"> Causes eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Causes eye irritation. Causes serious eye damage. No known significant effects or critical hazards. No known significant effects or critical hazards.
Inhalation	<ul style="list-style-type: none"> : AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control 	<ul style="list-style-type: none"> No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	<ul style="list-style-type: none"> : AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control 	<ul style="list-style-type: none"> No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. May cause an allergic skin reaction. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	<ul style="list-style-type: none"> : AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol 	<ul style="list-style-type: none"> No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Section 11. Toxicological information

pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: AD-293 Cell Line >1 x 10e6 Viable Cells	Adverse symptoms may include the following: irritation watering redness
	pShuttle Vector	No specific data.
	pShuttle-CMV Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
Inhalation	BJ5183-AD-1 electroporation competent cells	No specific data.
	XL10-Gold Ultracompetent cells	Adverse symptoms may include the following: irritation watering redness
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
	pUC 18 DNA Control Plasmid	No specific data.
	Transformation Control	No specific data.
	: AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
	pShuttle Vector	No specific data.
	pShuttle-CMV Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	BJ5183-AD-1 electroporation competent cells	No specific data.
XL10-Gold Ultracompetent cells	No specific data.	
XL10-Gold 2-Mercaptoethanol	No specific data.	
Skin contact	pUC 18 DNA Control Plasmid	No specific data.
	Transformation Control	No specific data.
	: AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
	pShuttle Vector	No specific data.
	pShuttle-CMV Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	BJ5183-AD-1 electroporation competent cells	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	pUC 18 DNA Control Plasmid	No specific data.
Transformation Control	No specific data.	
Ingestion	: AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
	pShuttle Vector	No specific data.
	pShuttle-CMV Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	BJ5183-AD-1 electroporation competent cells	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following:

Section 11. Toxicological information

pUC 18 DNA Control Plasmid	stomach pains
Transformation Control	No specific data.
	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : AD-293 Cell Line >1 x 10e6 Viable Cells No known significant effects or critical hazards.

pShuttle Vector No known significant effects or critical hazards.

pShuttle-CMV Vector No known significant effects or critical hazards.

pShuttle-CMV-lacZ Control Vector No known significant effects or critical hazards.

BJ5183-AD-1 electroporation competent cells No known significant effects or critical hazards.

XL10-Gold Ultracompetent cells No known significant effects or critical hazards.

XL10-Gold 2-Mercaptoethanol Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Transformation Control No known significant effects or critical hazards.

Carcinogenicity : AD-293 Cell Line >1 x 10e6 Viable Cells No known significant effects or critical hazards.

pShuttle Vector No known significant effects or critical hazards.

pShuttle-CMV Vector No known significant effects or critical hazards.

pShuttle-CMV-lacZ Control Vector No known significant effects or critical hazards.

BJ5183-AD-1 electroporation competent cells No known significant effects or critical hazards.

XL10-Gold Ultracompetent cells No known significant effects or critical hazards.

XL10-Gold 2-Mercaptoethanol No known significant effects or critical hazards.

pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Transformation Control No known significant effects or critical hazards.

Mutagenicity : AD-293 Cell Line >1 x 10e6 Viable Cells No known significant effects or critical hazards.

pShuttle Vector No known significant effects or critical hazards.

pShuttle-CMV Vector No known significant effects or critical hazards.

pShuttle-CMV-lacZ Control Vector No known significant effects or critical hazards.

BJ5183-AD-1 electroporation competent cells No known significant effects or critical hazards.

XL10-Gold Ultracompetent cells No known significant effects or critical hazards.

XL10-Gold 2-Mercaptoethanol No known significant effects or critical hazards.

pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Transformation Control No known significant effects or critical hazards.

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Teratogenicity	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Developmental effects	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Fertility effects	: AD-293 Cell Line >1 x 10e6 Viable Cells pShuttle Vector pShuttle-CMV Vector pShuttle-CMV-lacZ Control Vector BJ5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Transformation Control	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
XL10-Gold Ultracompetent cells Oral	136842.1 mg/kg
XL10-Gold 2-Mercaptoethanol Oral	4615.5 mg/kg
Dermal	4545.5 mg/kg
Inhalation (vapors)	45.45 mg/l

Section 12. Ecological information

12.1 Toxicity

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 100 ul/L Marine water	Algae - Ulva lactuca	72 hours
BJ5183-AD-1 electroporation competent cells Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
XL10-Gold Ultracompetent cells Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 100 ul/L Marine water	Algae - Ulva lactuca	72 hours
Potassium chloride	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 141460 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 12.92 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
	Acute LC50 880000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
XL10-Gold 2-Mercaptoethanol Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1.56 g/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks

12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
XL10-Gold Ultracompetent cells Potassium chloride	-	-	Readily

12.3 Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	-1.35	3.16	low
BJ5183-AD-1 electroporation competent cells Glycerol	-1.76	-	low
XL10-Gold Ultracompetent cells Glycerol	-1.76	-	low
Dimethyl sulfoxide	-1.35	3.16	low
Potassium chloride	-0.46	-	low
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	-0.056	-	low

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

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

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

Section 14. Transport information

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

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

U.S. Federal regulations : TSCA 4(a) proposed test rules: Glycine
 United States inventory (TSCA 8b): Not determined.
 Clean Water Act (CWA) 311: Iron trinitrate; Edetic acid

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : 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
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	≥10 - ≤25	Yes.	No.	No.	Yes.	No.
BJ5183-AD-1 electroporation competent cells Glycerol	<10	No.	No.	No.	Yes.	No.
XL10-Gold Ultracompetent cells Glycerol	≥10 - ≤25	No.	No.	No.	Yes.	No.
Dimethyl sulfoxide	≤10	Yes.	No.	No.	Yes.	No.
Potassium chloride	≤3	No.	No.	No.	Yes.	No.
XL10-Gold 2-Mercaptoethanol Sodium chloride	≥10 - ≤25	No.	No.	No.	Yes.	No.
2-Mercaptoethanol	≤5	Yes.	No.	No.	Yes.	No.

State regulations

Section 15. Regulatory information

Massachusetts	: The following components are listed: GLYCERINE MIST
New York	: None of the components are listed.
New Jersey	: The following components are listed: DIMETHYL SULFOXIDE; METHANE, SULFINYLBIIS-; GLYCERIN; 1,2,3-PROPANETRIOL
Pennsylvania	: The following components are listed: 1,2,3-PROPANETRIOL
California Prop. 65	

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	: All components are listed or exempted.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Turkey	: Not determined.

Section 16. Other information

History

Date of issue	: 03/28/2017
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Version	: 5

✔ Indicates information that has changed from previously issued version.

Notice to reader

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