



SAFETY DATA SHEET

AdEasy XL Adenoviral Vector System Kit, Part Number 240010

Section 1. Identification

Product identifier	: 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

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

Identified 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)

Supplier/Manufacturer	: Agilent Technologies, Inc. 5301 Stevens Creek Blvd Santa Clara, CA 95051, USA 800-227-9770
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Emergency telephone number (with hours of operation)	: CHEMTREC®: 1-800-424-9300
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Section 2. Hazard identification

Classification of the substance or mixture

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

H320	EYE IRRITATION - Category 2B BIOHAZARDOUS INFECTIOUS MATERIALS - Category 1
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XL10-Gold Ultracompetent cells

H320	EYE IRRITATION - Category 2B
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XL10-Gold 2-Mercaptoethanol

H318	SERIOUS EYE DAMAGE - Category 1
H317	SKIN SENSITIZATION - Category 1A
H361	TOXIC TO REPRODUCTION - Category 2
H373	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
H412	AQUATIC HAZARD (LONG-TERM) - Category 3

Section 2. Hazard identification

GHS label elements

Hazard pictograms

: AD-293 Cell Line >1 x 10⁶
Viable Cells



XL10-Gold
2-Mercaptoethanol



Signal word

: AD-293 Cell Line >1 x 10⁶
Viable Cells

Danger

pShuttle Vector

No signal word.

pShuttle-CMV Vector

No signal word.

pShuttle-CMV-lacZ Control
Vector

No signal word.

BJ5183-AD-1

No signal word.

electroporation competent
cells

XL10-Gold Ultracompetent
cells

Warning

XL10-Gold

Danger

2-Mercaptoethanol

pUC 18 DNA Control Plasmid
Transformation Control

No signal word.

No signal word.

Hazard statements

: AD-293 Cell Line >1 x 10⁶
Viable Cells

H320 - Causes eye irritation.

pShuttle Vector

This is a biohazardous infectious material.

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

No known significant effects or critical hazards.

electroporation competent
cells

XL10-Gold Ultracompetent
cells

H320 - Causes eye irritation.

XL10-Gold

H317 - May cause an allergic skin reaction.

2-Mercaptoethanol

H318 - Causes serious eye damage.

H361 - Suspected of damaging fertility or the unborn child.

H373 - May cause damage to organs through prolonged or repeated exposure.

H412 - Harmful to aquatic life with long lasting effects.

pUC 18 DNA Control Plasmid
Transformation Control

No known significant effects or critical hazards.

No known significant effects or critical hazards.

Precautionary statements

Prevention

: AD-293 Cell Line >1 x 10⁶
Viable Cells

Not applicable.

pShuttle Vector

Not applicable.

pShuttle-CMV Vector

Not applicable.

pShuttle-CMV-lacZ Control
Vector

Not applicable.

BJ5183-AD-1

Not applicable.

electroporation competent

Section 2. Hazard identification

Response

cells	
XL10-Gold Ultracompetent cells	Not applicable.
XL10-Gold 2-Mercaptoethanol	P201 - Obtain special instructions before use.
	P280 - Wear protective gloves, protective clothing and eye or face protection.
	P273 - Avoid release to the environment.
	P260 - Do not breathe vapor.
pUC 18 DNA Control Plasmid Transformation Control	Not applicable.
AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.
	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P337 + P313 - If eye irritation persists: Get medical advice or attention.
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	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P337 + P313 - If eye irritation persists: Get medical advice or attention.
XL10-Gold 2-Mercaptoethanol	P308 + P313 - IF exposed or concerned: Get medical advice or attention.
	P362 + P364 - Take off contaminated clothing and wash it before reuse.
	P302 + P352 - IF ON SKIN: Wash with plenty of water.
	P333 + P313 - If skin irritation or rash occurs: Get medical advice or 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 doctor.

Storage

pUC 18 DNA Control Plasmid Transformation Control	Not applicable.
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 Transformation Control	Not applicable.

Section 2. Hazard identification

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 Transformation Control	Not applicable.
			Not applicable.
Supplemental label elements	:	AD-293 Cell Line >1 x 10e6 Viable Cells	Biohazard - The product contains Adenovirus considered as a Biosafety Level 2 substance.
		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 Transformation Control	None known.
			None known.
Other hazards which do not result in classification	:	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 Transformation Control	None known.
			None known.

Section 3. Composition/information on ingredients

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

Ingredient name	Synonyms	% (w/w)	CAS number
AD-293 Cell Line >1 x 10e6 Viable Cells			
Dimethyl sulfoxide	Dimethyl sulfoxide	≥10 - ≤30	67-68-5
Adenovirus	Adenovirus	≥0.1 - ≤1	-
BJ5183-AD-1 electroporation competent cells			
Glycerol	Glycerol	≥5 - ≤10	56-81-5
XL10-Gold Ultracompetent cells			
Glycerol	Glycerol	≥10 - ≤30	56-81-5
Dimethyl sulfoxide	Dimethyl sulfoxide	≥5 - ≤10	67-68-5
Potassium chloride	Potassium Chloride	≥1 - ≤5	7447-40-7
XL10-Gold 2-Mercaptoethanol			
2-Mercaptoethanol	ethanol, 2-mercapto-	≥1 - ≤5	60-24-2

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

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

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

Section 4. First-aid measures

Description of necessary first aid measures

Section 4. 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 medical attention if irritation occurs.
XL10-Gold Ultracompetent 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.
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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
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

Section 4. First-aid measures

	pShuttle-CMV-lacZ Control Vector	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.
	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 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.
	pUC 18 DNA Control Plasmid	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Transformation Control	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	Get medical attention immediately. Call a poison

Section 4. First-aid measures

	2-Mercaptoethanol	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.
Ingestion	:  AD-293 Cell Line >1 x 10e6 Viable Cells	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	pShuttle Vector	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	pShuttle-CMV Vector	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	pShuttle-CMV-lacZ Control Vector	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	BJ5183-AD-1 electroporation competent cells	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	XL10-Gold Ultracompetent cells	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get

Section 4. First-aid measures

XL10-Gold
2-Mercaptoethanol

medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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. 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. 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.

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.

Section 4. First-aid measures

Skin contact

pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.
: 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	May cause an allergic skin reaction.

Ingestion

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

Over-exposure signs/symptoms

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.
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.

Section 4. First-aid measures

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

Section 4. First-aid measures

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

Notes to physician	: AD-293 Cell Line >1 x 10e6 Viable Cells	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	pShuttle Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pShuttle-CMV Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pShuttle-CMV-lacZ Control Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	BJ5183-AD-1 electroporation competent cells	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	XL10-Gold Ultracompetent cells	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	XL10-Gold 2-Mercaptoethanol	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pUC 18 DNA Control Plasmid	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	Transformation Control	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	: AD-293 Cell Line >1 x 10e6 Viable Cells	No specific treatment.
	pShuttle Vector	No specific treatment.
	pShuttle-CMV Vector	No specific treatment.
	pShuttle-CMV-lacZ Control Vector	No specific treatment.
	BJ5183-AD-1 electroporation competent cells	No specific treatment.
	XL10-Gold Ultracompetent cells	No specific treatment.
	XL10-Gold 2-Mercaptoethanol	No specific treatment.
Protection of first-aiders	pUC 18 DNA Control Plasmid	No specific treatment.
	Transformation Control	No specific treatment.
	: AD-293 Cell Line >1 x 10e6 Viable Cells	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.
	pShuttle Vector	No action shall be taken involving any personal risk or without suitable training.
	pShuttle-CMV Vector	No action shall be taken involving any personal risk or without suitable training.
	pShuttle-CMV-lacZ Control Vector	No action shall be taken involving any personal risk or without suitable training.
	BJ5183-AD-1 electroporation competent cells	No action shall be taken involving any personal risk or without suitable training.
	XL10-Gold Ultracompetent cells	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to

Section 4. First-aid measures

XL10-Gold
2-Mercaptoethanol

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.

pUC 18 DNA Control Plasmid

No action shall be taken involving any personal risk or without suitable training.

Transformation Control

No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Use an extinguishing agent suitable for the surrounding fire.

Use an extinguishing agent suitable for the surrounding fire.

pShuttle-CMV Vector

Use an extinguishing agent suitable for the surrounding fire.

pShuttle-CMV-lacZ Control
Vector

Use an extinguishing agent suitable for the surrounding fire.

BJ5183-AD-1
electroporation competent
cells

Use an extinguishing agent suitable for the surrounding fire.

XL10-Gold Ultracompetent
cells

Use an extinguishing agent suitable for the surrounding fire.

XL10-Gold
2-Mercaptoethanol

Use an extinguishing agent suitable for the surrounding fire.

pUC 18 DNA Control Plasmid

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.

Section 5. Fire-fighting measures

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	In a fire or if heated, a pressure increase will occur and the container may burst.
2-Mercaptoethanol	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
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 nitrogen oxides sulfur oxides phosphorus 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	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
2-Mercaptoethanol	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
pUC 18 DNA Control Plasmid	No specific data.
Transformation Control	No specific data.

Section 5. Fire-fighting measures

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.
Special protective equipment for fire-fighters	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.
	: 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 (SCBA) with a full face-piece operated in positive pressure mode.
	BJ5183-AD-1 electroporation competent cells	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	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.

Section 5. Fire-fighting measures

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

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.
	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

Section 6. Accidental release measures

		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 spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	Transformation Control	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".

Section 6. Accidental release measures

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). Water polluting material. May be harmful to the environment if released in large quantities.
	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).

Methods and materials for containment and cleaning up

Methods for cleaning up	: AD-293 Cell Line >1 x 10e6 Viable Cells	Stop leak if without risk. Contain spill and decontaminate the area using a disinfectant e.g. a 10% bleach for 20 min. Move containers from spill area. 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.

Section 6. Accidental release measures

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

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).

Section 7. Handling and storage

Advice on general occupational hygiene	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. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. 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).
	AD-293 Cell Line >1 x 10e6 Viable Cells	Handle this product as biohazardous material under biosafety level (BSL)-2 containment. 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 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-lacZ Control 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

Section 7. Handling and storage

BJ5183-AD-1
electroporation competent
cells

before entering eating areas. See also Section 8 for additional information on hygiene measures. Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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.

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 containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

pShuttle Vector

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

Section 7. Handling and storage

pShuttle-CMV Vector

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

pShuttle-CMV-lacZ Control Vector

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

BJ5183-AD-1 electroporation competent cells

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

XL10-Gold Ultracompetent cells

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

XL10-Gold 2-Mercaptoethanol

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 and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

pUC 18 DNA Control Plasmid

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from

Section 7. Handling and storage

Transformation Control

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

Section 8. Exposure controls/personal protection

[Control parameters](#)

[Occupational exposure limits](#)

Ingredient name	Exposure limits
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	OARS WEEL (United States, 4/2022). TWA: 250 ppm 8 hours.
BJ5183-AD-1 electroporation competent cells Glycerol	CA Alberta Provincial (Canada, 6/2018). OEL: 10 mg/m ³ 8 hours. Form: Mist CA Quebec Provincial (Canada, 6/2022). TWA _{EV} : 10 mg/m ³ 8 hours. Form: mist CA Saskatchewan Provincial (Canada, 7/2013). STEL: 20 mg/m ³ 15 minutes. Form: mist TWA: 10 mg/m ³ 8 hours. Form: mist CA British Columbia Provincial (Canada, 6/2023). TWA: 3 mg/m ³ 8 hours. Form: respirable mist TWA: 10 mg/m ³ 8 hours. Form: total mist
XL10-Gold Ultracompetent cells Glycerol	CA Alberta Provincial (Canada, 6/2018). OEL: 10 mg/m ³ 8 hours. Form: Mist CA Quebec Provincial (Canada, 6/2022). TWA _{EV} : 10 mg/m ³ 8 hours. Form: mist CA Saskatchewan Provincial (Canada, 7/2013). STEL: 20 mg/m ³ 15 minutes. Form: mist TWA: 10 mg/m ³ 8 hours. Form: mist CA British Columbia Provincial (Canada, 6/2023). TWA: 3 mg/m ³ 8 hours. Form: respirable mist

Section 8. Exposure controls/personal protection

Dimethyl sulfoxide	TWA: 10 mg/m ³ 8 hours. Form: total mist OARS WEEL (United States, 4/2022). TWA: 250 ppm 8 hours.
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	OARS WEEL (United States, 4/2022). Absorbed through skin. TWA: 0.2 ppm 8 hours.

Biological exposure indices

No exposure indices known.

- 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: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 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 and safety characteristics

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

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	Liquid.
2-Mercaptoethanol	
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	Not available.
2-Mercaptoethanol	
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	Not available.
2-Mercaptoethanol	
pUC 18 DNA Control Plasmid Transformation Control	Not available.

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.

Section 9. Physical and chemical properties and safety characteristics

	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold	Not available.
	2-Mercaptoethanol	
	pUC 18 DNA Control Plasmid	Not available.
	Transformation Control	Not available.
pH	: AD-293 Cell Line >1 x 10e6 Viable Cells	7.5
	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	Not available.
	2-Mercaptoethanol	
	pUC 18 DNA Control Plasmid	7.5
	Transformation Control	7.5
Melting point/freezing point	: AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
	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	Not available.
	2-Mercaptoethanol	
	pUC 18 DNA Control Plasmid	0°C (32°F)
	Transformation Control	0°C (32°F)
Boiling point, initial boiling point, and boiling range	: AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
	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	Not available.
	2-Mercaptoethanol	
	pUC 18 DNA Control Plasmid	100°C (212°F)
	Transformation Control	100°C (212°F)
Flash point	:	

Section 9. Physical and chemical properties and safety characteristics

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
AD-293 Cell Line >1 x 10e6 Viable Cells						
Dimethyl sulfoxide	87	188.6	ASTM D 93	87	188.6	-
BJ5183-AD-1 electroporation competent cells						
Glycerol	-	-	-	177	350.6	-
XL10-Gold Ultracompetent cells						
Dimethyl sulfoxide	87	188.6	ASTM D 93	87	188.6	-
Glycerol	-	-	-	177	350.6	-
XL10-Gold 2-Mercaptoethanol						
2-Mercaptoethanol	74	165.2	-	74	165.2	-

Evaporation rate : 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.

Flammability : 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.

Section 9. Physical and chemical properties and safety characteristics

Lower and upper explosion limit/flammability limit

pUC 18 DNA Control Plasmid	Not applicable.
Transformation Control	Not applicable.
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.

Vapor pressure

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
AD-293 Cell Line >1 x 10e6 Viable Cells						
water	17.5	2.3	-	92.258	12.3	-
Dimethyl sulfoxide	0.42	0.056	EU A.4	-	-	-
pShuttle Vector						
water	17.5	2.3	-	92.258	12.3	-
pShuttle-CMV Vector						
water	17.5	2.3	-	92.258	12.3	-
pShuttle-CMV-lacZ Control Vector						
water	17.5	2.3	-	92.258	12.3	-
BJ5183-AD-1 electroporation competent cells						
water	17.5	2.3	-	92.258	12.3	-
Glycerol	0.000075	0.00001	-	0.0025	0.00033	-
XL10-Gold Ultracompetent						

Section 9. Physical and chemical properties and safety characteristics

cells							
water	17.5	2.3	-	92.258	12.3	-	
Dimethyl sulfoxide	0.42	0.056	EU A.4	-	-	-	
XL10-Gold 2-Mercaptoethanol							
water	17.5	2.3	-	92.258	12.3	-	
2-Mercaptoethanol	0.97508	0.13	-	-	-	-	
pUC 18 DNA Control Plasmid							
water	17.5	2.3	-	92.258	12.3	-	
Transformation Control							
water	17.5	2.3	-	92.258	12.3	-	

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

Relative density : AD-293 Cell Line >1 x 10e6 Not available.
Viable Cells
pShuttle Vector Not available.
pShuttle-CMV Vector Not available.
pShuttle-CMV-lacZ Control Vector Not available.
BJ5183-AD-1 Not available.
electroporation competent cells
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 and safety characteristics

Solubility(ies)	Media	Result
	AD-293 Cell Line >1 x 10e6 Viable Cells	
	water	Soluble
	pShuttle Vector	
	water	Soluble
	pShuttle-CMV Vector	
	water	Soluble
	pShuttle-CMV-lacZ Control Vector	
	water	Soluble
	BJ5183-AD-1 electroporation competent cells	
	water	Soluble
	XL10-Gold Ultracompetent cells	
	water	Soluble
	XL10-Gold 2-Mercaptoethanol	
	water	Soluble
	pUC 18 DNA Control Plasmid	
	water	Soluble
	Transformation Control	
	water	Soluble

Partition coefficient: n-octanol/water	:	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.

Auto-ignition temperature	:	Ingredient name	°C	°F	Method
		AD-293 Cell Line >1 x 10e6 Viable Cells			
		Dimethyl sulfoxide	300 to 302	572 to 575.6	-
		BJ5183-AD-1 electroporation competent cells			
		Glycerol	370	698	-
		XL10-Gold Ultracompetent cells			
		Dimethyl sulfoxide	300 to 302	572 to 575.6	-
		Glycerol	370	698	-

Section 9. Physical and chemical properties and safety characteristics

XL10-Gold 2-Mercaptoethanol

2-Mercaptoethanol

295

563

-

Decomposition temperature : 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.
 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 Transformation Control Not available.
 Not available.

Particle characteristics

Median particle size

: 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 Transformation Control Not applicable.
 Not applicable.

Section 10. Stability and reactivity

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	No specific test data related to reactivity available for this product or its ingredients.
	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.
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	The product is stable.
	2-Mercaptoethanol	The product is stable.
	pUC 18 DNA Control Plasmid	The product is stable.
	Transformation Control	The product is stable.
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 competent cells	Under normal conditions of storage and use, hazardous reactions will not occur.
	XL10-Gold Ultracompetent cells	Under normal conditions of storage and use, hazardous reactions will not occur.
	XL10-Gold	Under normal conditions of storage and use, hazardous reactions will not occur.
	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.

Section 10. Stability and reactivity

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	No specific data.
	2-Mercaptoethanol	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	Transformation Control	No specific data.
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	May react or be incompatible with oxidizing materials.
	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.
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.
	XL10-Gold	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	2-Mercaptoethanol	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

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	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-
BJ5183-AD-1 electroporation competent cells				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
XL10-Gold Ultracompetent cells				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
XL10-Gold 2-Mercaptoethanol				
2-Mercaptoethanol	LD50 Oral	Rat	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	Rabbit	-	100 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
BJ5183-AD-1 electroporation competent cells					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
XL10-Gold Ultracompetent cells					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-

Section 11. Toxicological information

XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 mg	-
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Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	Category 2	-	heart, liver

Aspiration hazard

Not available.

Information on the likely routes of exposure

AD-293 Cell Line >1 x 10e6 Viable Cells	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
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	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
XL10-Gold 2-Mercaptoethanol	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
pUC 18 DNA Control Plasmid	Not available.
Transformation Control	Not available.

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.

Section 11. Toxicological information

	XL10-Gold	Causes serious eye damage.
	2-Mercaptoethanol	
	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	No known significant effects or critical hazards.
	2-Mercaptoethanol	
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
Skin contact	: 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	May cause an allergic skin reaction.
	2-Mercaptoethanol	
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
Ingestion	: 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	No known significant effects or critical hazards.
	2-Mercaptoethanol	
	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.

Section 11. Toxicological information

	pShuttle-CMV-lacZ Control Vector	No specific data.
	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 Transformation Control	No specific data.
Inhalation	: 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: reduced fetal weight increase in fetal deaths skeletal malformations
	pUC 18 DNA Control Plasmid Transformation Control	No specific data.
Skin contact	: 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 reduced fetal weight increase in fetal deaths skeletal malformations
	pUC 18 DNA Control Plasmid Transformation Control	No specific data.

Section 11. Toxicological information

Ingestion	: AD-293 Cell Line >1 x 10e6	No specific data.
	Viable Cells	
	pShuttle Vector	No specific data.
	pShuttle-CMV Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	BJ5183-AD-1	No specific data.
	electroporation competent cells	
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold	Adverse symptoms may include the following:
	2-Mercaptoethanol	stomach pains reduced fetal weight increase in fetal deaths skeletal malformations
	pUC 18 DNA Control Plasmid	No specific data.
	Transformation Control	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	No known significant effects or critical hazards.
	Viable Cells	
	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	No known significant effects or critical hazards.
	electroporation competent cells	
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold	May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	2-Mercaptoethanol	
	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	No known significant effects or critical hazards.
	Viable Cells	
	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	No known significant effects or critical hazards.
	electroporation competent cells	
	XL10-Gold Ultracompetent	No known significant effects or critical hazards.

Section 11. Toxicological information

Mutagenicity

cells	
XL10-Gold	No known significant effects or critical hazards.
2-Mercaptoethanol	
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.
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	No known significant effects or critical hazards.
2-Mercaptoethanol	
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.

Reproductive toxicity

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	Suspected of damaging fertility or the unborn child.
2-Mercaptoethanol	
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
AD-293 Cell Line >1 x 10e6 Viable Cells					
Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A
BJ5183-AD-1 electroporation competent cells					
Glycerol	12600	N/A	N/A	N/A	N/A
XL10-Gold Ultracompetent cells					
XL10-Gold Ultracompetent cells	136842.1	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A
Potassium chloride	2600	N/A	N/A	N/A	N/A
XL10-Gold 2-Mercaptoethanol					
XL10-Gold 2-Mercaptoethanol	4615.5	4545.5	N/A	60.7	N/A
2-Mercaptoethanol	244	200	N/A	3	N/A

Section 11. Toxicological information

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water Acute LC50 34000000 µg/l Fresh water Chronic NOEC 100 µl/L Marine water Chronic NOEC 100 µl/L Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate Fish - <i>Pimephales promelas</i> Algae - <i>Ulva lactuca</i> Daphnia - <i>Daphnia magna</i> - Juvenile (Fledgling, Hatchling, Weanling)	48 hours 96 hours 72 hours 21 days
BJ5183-AD-1 electroporation competent cells Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours
XL10-Gold Ultracompetent cells Glycerol Dimethyl sulfoxide	Acute LC50 54000 mg/l Fresh water Acute LC50 25000 ppm Fresh water Acute LC50 34000000 µg/l Fresh water Chronic NOEC 100 µl/L Marine water Chronic NOEC 100 µl/L Fresh water	Fish - <i>Oncorhynchus mykiss</i> Daphnia - <i>Daphnia magna</i> - Neonate Fish - <i>Pimephales promelas</i> Algae - <i>Ulva lactuca</i> Daphnia - <i>Daphnia magna</i> - Juvenile (Fledgling, Hatchling, Weanling)	96 hours 48 hours 96 hours 72 hours 21 days
Potassium chloride	Acute EC50 9.24 g/L Fresh water Acute EC50 1337000 µg/l Fresh water Acute LC50 9.68 mg/l Fresh water Acute LC50 93000 µg/l Fresh water Acute LC50 509.65 mg/l Fresh water	Algae - <i>Desmodesmus subspicatus</i> Algae - <i>Navicula seminulum</i> Crustaceans - <i>Pseudosida ramosa</i> - Neonate Daphnia - <i>Daphnia magna</i> Fish - <i>Danio rerio</i>	72 hours 96 hours 48 hours 48 hours 96 hours
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	Acute EC50 0.4 mg/l Fresh water	Daphnia	48 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	OECD 301D Ready Biodegradability - Closed Bottle Test	31 % - Not readily - 28 days	-	-
BJ5183-AD-1 electroporation competent cells				

Section 12. Ecological information

Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
XL10-Gold Ultracompetent cells				
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
Dimethyl sulfoxide	OECD 301D Ready Biodegradability - Closed Bottle Test	31 % - Not readily - 28 days	-	-
XL10-Gold 2-Mercaptoethanol				
2-Mercaptoethanol	OECD 310 Ready Biodegradability - CO ₂ in Sealed Vessels (Headspace Test)	69 % - Not readily - 60 days	20 mg/l	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
AD-293 Cell Line >1 x 10e6 Viable Cells			
Dimethyl sulfoxide	-	-	Not readily
XL10-Gold Ultracompetent cells			
Dimethyl sulfoxide	-	-	Not readily
Potassium chloride	-	-	Readily
XL10-Gold 2-Mercaptoethanol			
2-Mercaptoethanol	-	-	Not readily

Bioaccumulative potential

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

Section 12. Ecological information

XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	-0.056	-	Low
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Mobility in soil

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

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

Section 13. Disposal considerations

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.

Section 14. Transport information

TDG / IMDG / IATA : Not regulated.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Section 15. Regulatory information

Not listed.

[Inventory list](#)

Canada : Not determined.

United States : Not determined.

Section 16. Other information

[History](#)

Date of issue/Date of revision : 02/02/2024

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Version : 8

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

[Procedure used to derive the classification](#)

Classification	Justification
AD-293 Cell Line >1 x 10e6 Viable Cells EYE IRRITATION - Category 2B BIOHAZARDOUS INFECTIOUS MATERIALS - Category 1	Calculation method Calculation method
XL10-Gold Ultracompetent cells EYE IRRITATION - Category 2B	Calculation method
XL10-Gold 2-Mercaptoethanol SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1A TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method Calculation method Calculation method Calculation method Calculation method

Indicates information that has changed from previously issued version.

[Notice to reader](#)

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