SAFETY DATA SHEET

Agilent Technologies

AdEasy XL Adenoviral Vector System Kit, Part Number 240010

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : AdEasy XL Adenoviral Vector System Kit, Part Number 240010

Part no. (chemical kit) : 240010

Part no. :

AD-293 Cell Line >1 x 10e6 Viable Cells	240085-41
pShuttle Vector	240006-51
pShuttle-CMV Vector	240007-51
pShuttle-CMV-lacZ Control Vector	240008-51
BJ5183-AD-1 electroporation competent cells	200157-41
XL10-Gold Ultracompetent cells	200315-41
XL10-Gold 2-Mercaptoethanol	200314-43
pUC 18 DNA Control Plasmid	200231-42
Transformation Control	200157-42

1.2 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)

Uses advised against : None known.

1.3 Details of the supplier of the safety data sheet

Agilent Technologies LDA UK Ltd.
5500 Lakeside Cheadle Royal Business Park,
Cheadle, Cheshire, SK8 3GR
United Kingdom
Tel: +44 (0) 345 712 5292

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition :

AD-293 Cell Line >1 x 10e6 Viable Cells	Mixture
pShuttle Vector	Mixture
pShuttle-CMV Vector	Mixture
pShuttle-CMV-lacZ Control Vector	Mixture
BJ5183-AD-1 electroporation competent cells	Mixture
XL10-Gold	Mixture

SECTION 2: Hazards identification

Ultracompetent cells	
XL10-Gold 2-Mercaptoethanol	Mixture
pUC 18 DNA Control Plasmid	Mixture
Transformation Control	Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

XL10-Gold

2-Mercaptoethanol

H318	SERIOUS EYE DAMAGE/EYE IRRITATION	Category 1
H317	SKIN SENSITISATION	Category 1
H361f	REPRODUCTIVE TOXICITY	Category 2
H412	LONG-TERM (CHRONIC) AQUATIC HAZARD	Category 3

AD-293 Cell Line >1 x 10e6 Viable Cells	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
pShuttle Vector	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
pShuttle-CMV Vector	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
pShuttle-CMV-lacZ Control Vector	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
BJ5183-AD-1 electroporation competent cells	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
XL10-Gold Ultracompetent cells	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
XL10-Gold 2-Mercaptoethanol	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
pUC 18 DNA Control Plasmid	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Transformation Control	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

Ingredients of unknown toxicity :

BJ5183-AD-1 electroporation competent cells	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30%
XL10-Gold Ultracompetent cells	Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30%
XL10-Gold 2-Mercaptoethanol	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30%

Ingredients of unknown ecotoxicity :

BJ5183-AD-1 electroporation competent cells	Contains 2.3% of components with unknown hazards to the aquatic environment
XL10-Gold Ultracompetent cells	Contains 5% of components with unknown hazards to the aquatic environment

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms : XL10-Gold 2-Mercaptoethanol

SECTION 2: Hazards identification

Signal word	AD-293 Cell Line >1 x 10e6 Viable Cells	No signal word.
	pShuttle Vector	No signal word.
	pShuttle-CMV Vector	No signal word.
	pShuttle-CMV-lacZ Control Vector	No signal word.
	BJ5183-AD-1 electroporation competent cells	No signal word.
	XL10-Gold Ultracompetent cells	No signal word.
	XL10-Gold 2-Mercaptoethanol	Danger
	pUC 18 DNA Control Plasmid	No signal word.
	Transformation Control	No signal word.
Hazard statements	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	H317 - May cause an allergic skin reaction. H318 - Causes serious eye damage. H361f - Suspected of damaging fertility. H412 - Harmful to aquatic life with long lasting effects.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
Precautionary statements		
Prevention	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	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection. P273 - Avoid release to the environment.
	pUC 18 DNA Control Plasmid	Not applicable.
	Transformation Control	Not applicable.
Response	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	Not applicable.

SECTION 2: Hazards identification

		competent cells	
		XL10-Gold Ultracompetent cells	Not applicable.
		XL10-Gold 2-Mercaptoethanol	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.
		pUC 18 DNA Control Plasmid	Not applicable.
		Transformation Control	Not applicable.
Storage	:	AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.
		pShuttle Vector	Not applicable.
		pShuttle-CMV Vector	Not applicable.
		pShuttle-CMV-lacZ Control Vector	Not applicable.
		BJ5183-AD-1 electroporation competent cells	Not applicable.
		XL10-Gold Ultracompetent cells	Not applicable.
		XL10-Gold 2-Mercaptoethanol	Not applicable.
		pUC 18 DNA Control Plasmid	Not applicable.
		Transformation Control	Not applicable.
Disposal	:	AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.
		pShuttle Vector	Not applicable.
		pShuttle-CMV Vector	Not applicable.
		pShuttle-CMV-lacZ Control Vector	Not applicable.
		BJ5183-AD-1 electroporation competent cells	Not applicable.
		XL10-Gold Ultracompetent cells	Not applicable.
		XL10-Gold 2-Mercaptoethanol	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		pUC 18 DNA Control Plasmid	Not applicable.
		Transformation Control	Not applicable.
Hazardous ingredients	:	XL10-Gold 2-Mercaptoethanol	2-mercaptoethanol
Supplemental label elements	:	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	Safety data sheet available on request.
		XL10-Gold Ultracompetent cells	Safety data sheet available on request.
		XL10-Gold 2-Mercaptoethanol	Not applicable.
		pUC 18 DNA Control Plasmid	Not applicable.
		Transformation Control	Not applicable.

SECTION 2: Hazards identification

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: 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.

Special packaging requirements

Containers to be fitted with child-resistant fastenings	: 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.
Tactile warning of danger	: 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.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII	: AD-293 Cell Line >1 x 10e6 Viable Cells	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
	pShuttle Vector	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
	pShuttle-CMV Vector	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
	pShuttle-CMV-lacZ Control Vector	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
	BJ5183-AD-1 electroporation competent cells	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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	XL10-Gold Ultracompetent cells	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
	XL10-Gold 2-Mercaptoethanol	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
	pUC 18 DNA Control Plasmid	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
	Transformation Control	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
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	None known.
	Transformation Control	None known.
Additional information :	AD-293 Cell Line >1 x 10e6 Viable Cells	Biohazard - The product contains Adenovirus considered as a Biosafety Level 2 substance.

SECTION 3: Composition/information on ingredients

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

Product/ingredient name	Identifiers	%	Classification	Type
BJ5183-AD-1 electroporation competent cells				
Glycerol	UK (GB) REACH #: Annex V REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≤10	Not classified.	[1]
XL10-Gold Ultracompetent cells				
Glycerol	UK (GB) REACH #: Annex V REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥10 - ≤25	Not classified.	[1]
Sucrose	UK (GB) REACH #: Annex IV REACH #: Annex IV EC: 200-334-9 CAS: 57-50-1	≤10	Not classified.	[1]
XL10-Gold 2-Mercaptoethanol				
2-Mercaptoethanol	EC: 200-464-6 CAS: 60-24-2	≤5	Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 3, H331 Skin Irrit. 2, H315	[1]

SECTION 3: Composition/information on ingredients

			Eye Dam. 1, H318 Skin Sens. 1A, H317 Repr. 2, H361f STOT RE 2, H373 (heart, liver) Aquatic Acute 1, H400 (M=1) Aquatic Chronic 2, H411 **See Section 16 for the full text of the H statements declared above.**	

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

BJ5183-AD-1 electroporation competent cells	[1] Substance with a workplace exposure limit
XL10-Gold Ultracompetent cells	[1] Substance with a workplace exposure limit
XL10-Gold 2-Mercaptoethanol	[1] Substance classified with a health or environmental hazard

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

SECTION 4: First aid measures

4.1 Description of 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. Get medical attention if irritation occurs.
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. Get medical attention if irritation occurs.
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. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
pShuttle Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

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

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Ingestion	: AD-293 Cell Line >1 x 10e6 Viable 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.
	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. 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 2-Mercaptoethanol	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.
Protection of first-aiders	: AD-293 Cell Line >1 x 10e6 Viable Cells	No action shall be taken involving any personal risk or without suitable training.
	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.

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XL10-Gold Ultracompetent cells	No action shall be taken involving any personal risk or without suitable training.
XL10-Gold 2-Mercaptoethanol	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.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye 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 watering redness
	pUC 18 DNA Control Plasmid	No specific data.
	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 foetal weight increase in foetal deaths skeletal malformations
	pUC 18 DNA Control Plasmid	No specific data.
	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.

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

4.3 Indication of any immediate medical attention and special treatment needed

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.
	Transformation Control	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments :	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	No specific treatment.

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competent cells	
XL10-Gold Ultracompetent cells	No specific treatment.
XL10-Gold 2-Mercaptoethanol	No specific treatment.
pUC 18 DNA Control Plasmid	No specific treatment.
Transformation Control	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media :

AD-293 Cell Line >1 x 10e6 Viable Cells	Use an extinguishing agent suitable for the surrounding fire.
pShuttle Vector	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.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture :

AD-293 Cell Line >1 x 10e6 Viable Cells	In a fire or if heated, a pressure increase will occur and the container may burst.
pShuttle Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
pShuttle-CMV Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
pShuttle-CMV-lacZ Control Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
BJ5183-AD-1 electroporation competent cells	In a fire or if heated, a pressure increase will occur and the container may burst.
XL10-Gold Ultracompetent cells	In a fire or if heated, a pressure increase will occur and the container may burst.
XL10-Gold 2-Mercaptoethanol	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being

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		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 combustion 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 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.

5.3 Advice for firefighters

Special protective actions for fire-fighters :	AD-293 Cell Line >1 x 10e6 Viable Cells	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	pShuttle Vector	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	pShuttle-CMV Vector	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	pShuttle-CMV-lacZ Control Vector	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	BJ5183-AD-1 electroporation competent cells	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	XL10-Gold Ultracompetent cells	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	XL10-Gold 2-Mercaptoethanol	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	pUC 18 DNA Control	Promptly isolate the scene by removing all persons from the

SECTION 5: Firefighting measures

	Plasmid	vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	Transformation Control	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters :	AD-293 Cell Line >1 x 10e6 Viable Cells	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	pShuttle Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	pShuttle-CMV Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	pShuttle-CMV-lacZ Control Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (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.
	XL10-Gold 2-Mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	pUC 18 DNA Control Plasmid	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Transformation Control	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel :	AD-293 Cell Line >1 x 10e6 Viable Cells	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. 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 spilt 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 spilt 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 spilt 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 spilt 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

SECTION 6: Accidental release measures

		not touch or walk through spilt material. Put on appropriate personal protective equipment.
	XL10-Gold 2-Mercaptoethanol	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour 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 spilt 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 spilt material. Put on appropriate personal protective equipment.
For emergency responders :	AD-293 Cell Line >1 x 10e6 Viable Cells	If specialised 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 specialised 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 specialised 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 specialised 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 specialised 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 specialised 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 specialised 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 specialised 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 specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions :	AD-293 Cell Line >1 x 10e6 Viable Cells	Avoid dispersal of spilt 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 spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution

SECTION 6: Accidental release measures

	(sewers, waterways, soil or air).
pShuttle-CMV Vector	Avoid dispersal of spilt 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 spilt 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 spilt 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 spilt 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 spilt 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 spilt 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 spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material 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. Dilute with water and mop up if water-soluble. Dispose of via a licensed waste disposal contractor.
	pShuttle Vector	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	pShuttle-CMV Vector	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	pShuttle-CMV-lacZ Control Vector	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	BJ5183-AD-1 electroporation competent cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	XL10-Gold Ultracompetent cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

SECTION 6: Accidental release measures

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.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures :

AD-293 Cell Line >1 x 10e6 Viable Cells	Put on appropriate personal protective equipment (see Section 8).
pShuttle Vector	Put on appropriate personal protective equipment (see Section 8).
pShuttle-CMV Vector	Put on appropriate personal protective equipment (see Section 8).
pShuttle-CMV-lacZ Control Vector	Put on appropriate personal protective equipment (see Section 8).
BJ5183-AD-1 electroporation competent cells	Put on appropriate personal protective equipment (see Section 8).
XL10-Gold Ultracompetent cells	Put on appropriate personal protective equipment (see Section 8).
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 vapour 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).

Advice on general occupational hygiene :

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.

SECTION 7: Handling and storage

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

7.2 Conditions for safe storage, including any incompatibilities

Storage	:	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 unlabelled 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

SECTION 7: Handling and storage

	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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
pShuttle-CMV 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 unlabelled 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 unlabelled 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 unlabelled 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 unlabelled 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 unlabelled 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 incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been

SECTION 7: Handling and storage

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

7.3 Specific end use(s)

Recommendations	: AD-293 Cell Line >1 x 10e6 Viable Cells	Industrial applications, Professional applications.
	pShuttle Vector	Industrial applications, Professional applications.
	pShuttle-CMV Vector	Industrial applications, Professional applications.
	pShuttle-CMV-lacZ Control Vector	Industrial applications, Professional applications.
	BJ5183-AD-1 electroporation competent cells	Industrial applications, Professional applications.
	XL10-Gold Ultracompetent cells	Industrial applications, Professional applications.
	XL10-Gold 2-Mercaptoethanol	Industrial applications, Professional applications.
	pUC 18 DNA Control Plasmid	Industrial applications, Professional applications.
	Transformation Control	Industrial applications, Professional applications.
Industrial sector specific solutions	: AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
	pShuttle Vector	Not available.
	pShuttle-CMV Vector	Not available.
	pShuttle-CMV-lacZ Control Vector	Not available.
	BJ5183-AD-1 electroporation competent cells	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	Transformation Control	Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
BJ5183-AD-1 electroporation competent cells	
Glycerol	**EH40/2005 WELs (United Kingdom (UK), 1/2020).** TWA: 10 mg/m³ 8 hours. Form: Mist
XL10-Gold Ultracompetent cells	
Glycerol	**EH40/2005 WELs (United Kingdom (UK), 1/2020).** TWA: 10 mg/m³ 8 hours. Form: Mist
Sucrose	**EH40/2005 WELs (United Kingdom (UK), 1/2020).** STEL: 20 mg/m³ 15 minutes. TWA: 10 mg/m³ 8 hours.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
XL10-Gold 2-Mercaptoethanol					
2-Mercaptoethanol	DNEL	Short term Oral	0.025 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	0.025 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	0.05 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	0.05 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	0.17 mg/m³	Workers	Systemic
	DNEL	Long term Inhalation	0.17 mg/m³	Workers	Systemic

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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

SECTION 8: Exposure controls/personal 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.

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.

SECTION 9: Physical and chemical properties

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

9.1 Information on basic physical and chemical properties

Appearance

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

SECTION 9: Physical and chemical properties

Odour	:	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.
Odour threshold	:	AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
		pShuttle Vector	Not available.
		pShuttle-CMV Vector	Not available.
		pShuttle-CMV-lacZ Control Vector	Not available.
		BJ5183-AD-1 electroporation competent cells	Not available.
		XL10-Gold Ultracompetent cells	Not available.
		XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	Not available.
		Transformation Control	Not available.
Melting point/freezing point	:	AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
		pShuttle Vector	0°C
		pShuttle-CMV Vector	0°C
		pShuttle-CMV-lacZ Control Vector	0°C
		BJ5183-AD-1 electroporation competent cells	Not available.
		XL10-Gold Ultracompetent cells	Not available.
		XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	0°C
		Transformation Control	0°C
Initial boiling point and boiling range	:	AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
		pShuttle Vector	100°C
		pShuttle-CMV Vector	100°C
		pShuttle-CMV-lacZ Control Vector	100°C
		BJ5183-AD-1 electroporation competent cells	Not available.
		XL10-Gold Ultracompetent cells	Not available.
		XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	100°C

SECTION 9: Physical and chemical properties

		Transformation Control	100°C
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.
		pUC 18 DNA Control Plasmid	Not applicable.
		Transformation Control	Not applicable.
Upper/lower flammability or explosive limits	:	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.

Flash point :

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

Auto-ignition temperature :

SECTION 9: Physical and chemical properties

Ingredient name	°C	Method
AD-293 Cell Line >1 x 10e6 Viable Cells		
dimethyl sulfoxide	300 to 302	-
BJ5183-AD-1 electroporation competent cells		
glycerol	370	-
XL10-Gold Ultracompetent cells		
dimethyl sulfoxide	300 to 302	-
glycerol	370	-
XL10-Gold 2-Mercaptoethanol		
2-mercaptoethanol	295	-

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	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 2-Mercaptoethanol	Not available.
pUC 18 DNA Control Plasmid	7.5
Transformation Control	7.5

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.

SECTION 9: Physical and chemical properties

XL10-Gold Ultracompetent cells	Not available.
XL10-Gold 2-Mercaptoethanol	Not available.
pUC 18 DNA Control Plasmid	Not available.
Transformation Control	Not available.

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.

Vapour pressure :

Ingredient name	Vapour Pressure at 20˚C			Vapour 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						

SECTION 9: Physical and chemical properties

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 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	-

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: Not available.
Transformation Control: Not available.

SECTION 9: Physical and chemical properties

Relative density	:	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.
Vapour density	:	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.
Explosive properties	:	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.
Oxidising properties	:	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.

SECTION 9: Physical and chemical properties

	Transformation Control	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	Not applicable.
	Transformation Control	Not applicable.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: AD-293 Cell Line >1 x 10e6 Viable Cells	No specific test data related to reactivity available for this product or its ingredients.
	pShuttle Vector	No specific test data related to reactivity available for this product or its ingredients.
	pShuttle-CMV Vector	No specific test data related to reactivity available for this product or its ingredients.
	pShuttle-CMV-lacZ Control Vector	No specific test data related to reactivity available for this product or its ingredients.
	BJ5183-AD-1 electroporation competent cells	No specific test data related to reactivity available for this product or its ingredients.
	XL10-Gold Ultracompetent cells	No specific test data related to reactivity available for this product or its ingredients.
	XL10-Gold 2-Mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.
	pUC 18 DNA Control Plasmid	No specific test data related to reactivity available for this product or its ingredients.
	Transformation Control	No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability	: AD-293 Cell Line >1 x 10e6 Viable Cells	The product is stable.
	pShuttle Vector	The product is stable.
	pShuttle-CMV Vector	The product is stable.
	pShuttle-CMV-lacZ Control Vector	The product is stable.
	BJ5183-AD-1 electroporation competent cells	The product is stable.
	XL10-Gold Ultracompetent cells	The product is stable.
	XL10-Gold 2-Mercaptoethanol	The product is stable.
	pUC 18 DNA Control Plasmid	The product is stable.
	Transformation Control	The product is stable.

SECTION 10: Stability and reactivity

10.3 Possibility of hazardous reactions	: AD-293 Cell Line >1 x 10e6 Viable Cells	Under normal conditions of storage and use, hazardous reactions will not occur.
	pShuttle Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	pShuttle-CMV Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	pShuttle-CMV-lacZ Control Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	BJ5183-AD-1 electroporation 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 2-Mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
	pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
	Transformation Control	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
	pShuttle Vector	No specific data.
	pShuttle-CMV Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	BJ5183-AD-1 electroporation competent cells	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	Transformation Control	No specific data.
10.5 Incompatible materials	: AD-293 Cell Line >1 x 10e6 Viable Cells	May react or be incompatible with oxidising materials.
	pShuttle Vector	May react or be incompatible with oxidising materials.
	pShuttle-CMV Vector	May react or be incompatible with oxidising materials.
	pShuttle-CMV-lacZ Control Vector	May react or be incompatible with oxidising materials.
	BJ5183-AD-1 electroporation competent cells	May react or be incompatible with oxidising materials.
	XL10-Gold Ultracompetent cells	May react or be incompatible with oxidising materials.
	XL10-Gold 2-Mercaptoethanol	May react or be incompatible with oxidising materials.
	pUC 18 DNA Control Plasmid	May react or be incompatible with oxidising materials.
	Transformation Control	May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	: AD-293 Cell Line >1 x 10e6 Viable Cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pShuttle Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pShuttle-CMV Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pShuttle-CMV-lacZ Control Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	BJ5183-AD-1	Under normal conditions of storage and use, hazardous

SECTION 10: Stability and reactivity

electroporation competent cells	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 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

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
BJ5183-AD-1 electroporation competent cells				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
XL10-Gold Ultracompetent cells				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sucrose	LD50 Oral	Rat	29700 mg/kg	-
XL10-Gold 2-Mercaptoethanol				
2-Mercaptoethanol	LD50 Oral	Rat	244 mg/kg	-

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
BJ5183-AD-1 electroporation competent cells					
Glycerol	12600	N/A	N/A	N/A	N/A
XL10-Gold Ultracompetent cells					
Glycerol	12600	N/A	N/A	N/A	N/A
Sucrose	29700	N/A	N/A	N/A	N/A
XL10-Gold 2-Mercaptoethanol					
XL10-Gold 2-Mercaptoethanol	5545.5	4545.5	N/A	60.7	N/A
2-Mercaptoethanol	244	200	N/A	3	N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
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	-

SECTION 11: Toxicological information

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

Sensitiser

Conclusion/Summary : 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)

Product/ingredient name	Category	Route of exposure	Target organs
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	Category 2	-	heart, liver

Aspiration hazard

Not available.

Information on 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

Inhalation :

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

SECTION 11: Toxicological information

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

Symptoms related to the physical, chemical and toxicological characteristics

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	Adverse symptoms may include the following:

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

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		watering redness
	pUC 18 DNA Control Plasmid	No specific data.
	Transformation Control	No specific data.

Delayed and immediate effects as well as 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

Conclusion/Summary : Not available.

General :	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	pShuttle Vector	No known significant effects or critical hazards.
	pShuttle-CMV Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
Carcinogenicity :	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	pShuttle Vector	No known significant effects or critical hazards.
	pShuttle-CMV Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
Mutagenicity :	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	pShuttle Vector	No known significant effects or critical hazards.
	pShuttle-CMV Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	XL10-Gold	No known significant effects or critical hazards.

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

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
BJ5183-AD-1 electroporation competent cells			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Trout - *Oncorhynchus mykiss*	96 hours
XL10-Gold Ultracompetent cells			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Trout - *Oncorhynchus mykiss*	96 hours
XL10-Gold 2-Mercaptoethanol			
2-Mercaptoethanol	Acute EC50 0.4 mg/l Fresh water	Daphnia	48 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
BJ5183-AD-1 electroporation competent cells				
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
XL10-Gold Ultracompetent cells				
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

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XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	OECD 310 Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)	69 % - Not readily - 60 days	20 mg/l	-

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
BJ5183-AD-1 electroporation competent cells Glycerol	-1.76	-	Low
XL10-Gold Ultracompetent cells Glycerol Sucrose	-1.76 -3.7	- -	Low Low
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	-0.056	-	Low

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised 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.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

SECTION 13: Disposal considerations

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No.	No.	No.

Additional information

14.6 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.

14.7 Transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

SECTION 15: Regulatory information

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product / Ingredient name	Identifiers	Status
XL10-Gold 2-Mercaptoethanol XL10-Gold 2-Mercaptoethanol		3

Label : 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.

Seveso Directive

This product is not controlled under the Seveso Directive.

EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments might still be required.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

United States : Not determined.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Classification	Justification
XL10-Gold 2-Mercaptoethanol	
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 2, H361f	Calculation method
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements

XL10-Gold
2-Mercaptoethanol

H301	Toxic if swallowed.
H310	Fatal in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications

XL10-Gold
2-Mercaptoethanol

Acute Tox. 2	ACUTE TOXICITY - Category 2
Acute Tox. 3	ACUTE TOXICITY - Category 3
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

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

Date of previous issue : 08/02/2021

Version : 5

Notice to reader

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