

SAFETY DATA SHEET

MBS Mammalian Transfection Kit, Part Number 200388

Section 1. Identification

Product identifier : MBS Mammalian Transfection Kit, Part Number 200388

Part no. (chemical kit) : 200388

Part no. :

MBS Transfection Kit Solution 1	200388-51
MBS Transfection Kit Solution 2	200388-52
MBS Transfection Kit Soltuion 3	200388-53
pCMV β -Gal Control Plasmid	200388-54

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

Identified uses :

- Analytical reagent.
- MBS Transfection Kit Solution 1 10 ml
- MBS Transfection Kit Solution 2 50 ml
- MBS Transfection Kit Soltuion 3 80 ml
- pCMV β -Gal Control Plasmid 0.04 ml (40 μ g) 1 μ g/ μ l

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

Emergency telephone number (with hours of operation) : CHEMTREC®: 1-800-424-9300

Section 2. Hazard identification

Classification of the substance or mixture

MBS Transfection Kit
Solution 1
H319

EYE IRRITATION - Category 2A

MBS Transfection Kit
Soltuion 3

Health Hazards Not Otherwise Classified - Category 1

GHS label elements

Hazard pictograms

: MBS Transfection Kit
Solution 1



MBS Transfection Kit
Soltuion 3



Signal word

: MBS Transfection Kit Solution 1 Warning
MBS Transfection Kit Solution 2 No signal word.
MBS Transfection Kit Soltuion 3 Danger
pCMV β -Gal Control Plasmid No signal word.

Section 2. Hazard identification

Hazard statements	: MBS Transfection Kit Solution 1	H319 - Causes serious eye irritation.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Soltuion 3	Prolonged or repeated contact may dry skin and cause irritation.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
<u>Precautionary statements</u>		
Prevention	: MBS Transfection Kit Solution 1	P280 - Wear eye or face protection.
	MBS Transfection Kit Solution 2	Not applicable.
	MBS Transfection Kit Soltuion 3	Not applicable.
	pCMV β -Gal Control Plasmid	Not applicable.
	Response	: MBS Transfection Kit Solution 1
MBS Transfection Kit Solution 2		Not applicable.
MBS Transfection Kit Soltuion 3		Not applicable.
pCMV β -Gal Control Plasmid		Not applicable.
Storage		: MBS Transfection Kit Solution 1
	MBS Transfection Kit Solution 2	Not applicable.
	MBS Transfection Kit Soltuion 3	Not applicable.
	pCMV β -Gal Control Plasmid	Not applicable.
	Disposal	: MBS Transfection Kit Solution 1
MBS Transfection Kit Solution 2		Not applicable.
MBS Transfection Kit Soltuion 3		Not applicable.
pCMV β -Gal Control Plasmid		Not applicable.
Supplemental label elements		: MBS Transfection Kit Solution 1
	MBS Transfection Kit Solution 2	None known.
	MBS Transfection Kit Soltuion 3	Avoid contact with skin and clothing. Wash thoroughly after handling.
	pCMV β -Gal Control Plasmid	None known.
	MBS Transfection Kit Soltuion 3	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 98.8%
Other hazards which do not result in classification	: MBS Transfection Kit Solution 1	None known.
	MBS Transfection Kit Solution 2	None known.
	MBS Transfection Kit Soltuion 3	None known.
	pCMV β -Gal Control Plasmid	None known.

Section 3. Composition/information on ingredients

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

Ingredient name	Synonyms	% (w/w)	CAS number
MBS Transfection Kit Solution 1 Calcium chloride (CaCl ₂), dihydrate	Calcium chloride	≥30 - ≤60	10035-04-8
MBS Transfection Kit Soltuion 3 Ethanol	Ethanol	≥1 - ≤5	64-17-5


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

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

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

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact	: MBS Transfection Kit Solution 1	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	MBS Transfection Kit Solution 2	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	MBS Transfection Kit Soltuion 3	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	pCMV β -Gal Control Plasmid	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	:  MBS Transfection Kit Solution 1	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	MBS Transfection Kit Solution 2	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be

Section 4. First-aid measures

	MBS Transfection Kit Soltuion 3	<p>delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</p> <p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</p>
	pCMV β -Gal Control Plasmid	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: MBS Transfection Kit Solution 1	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	MBS Transfection Kit Solution 2	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	MBS Transfection Kit Soltuion 3	Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	pCMV β -Gal Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: MBS Transfection Kit Solution 1	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	MBS Transfection Kit Solution 2	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.
	MBS Transfection Kit Soltuion 3	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

Section 4. First-aid measures

vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

pCMV β -Gal 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: MBS Transfection Kit Solution 1	Causes serious eye irritation.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Inhalation	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Skin contact	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 3	Defatting to the skin. May cause skin dryness and irritation.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Ingestion	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: MBS Transfection Kit Solution 1	Adverse symptoms may include the following: pain or irritation watering redness
	MBS Transfection Kit Solution 2	No specific data.
	MBS Transfection Kit Solution 3	No specific data.
	pCMV β -Gal Control Plasmid	No specific data.

Section 4. First-aid measures

Inhalation	: MBS Transfection Kit Solution 1	No specific data.
	MBS Transfection Kit Solution 2	No specific data.
	MBS Transfection Kit Soltuion 3	No specific data.
	pCMV β -Gal Control Plasmid	No specific data.
	Skin contact	: MBS Transfection Kit Solution 1
	MBS Transfection Kit Solution 2	No specific data.
	MBS Transfection Kit Soltuion 3	Adverse symptoms may include the following: irritation dryness cracking
Ingestion	pCMV β -Gal Control Plasmid	No specific data.
	: MBS Transfection Kit Solution 1	No specific data.
	MBS Transfection Kit Solution 2	No specific data.
	MBS Transfection Kit Soltuion 3	No specific data.
	pCMV β -Gal Control Plasmid	No specific data.

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

Notes to physician	: <input checked="" type="checkbox"/> MBS Transfection Kit Solution 1	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	MBS Transfection Kit Solution 2	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	MBS Transfection Kit Soltuion 3	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	pCMV β -Gal Control Plasmid	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: MBS Transfection Kit Solution 1	No specific treatment.
	MBS Transfection Kit Solution 2	No specific treatment.
	MBS Transfection Kit Soltuion 3	No specific treatment.
	pCMV β -Gal Control Plasmid	No specific treatment.
Protection of first-aiders	: MBS Transfection Kit Solution 1	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	MBS Transfection Kit Solution 2	No action shall be taken involving any personal risk or without suitable training.
	MBS Transfection Kit Soltuion 3	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	pCMV β -Gal Control Plasmid	No action shall be taken involving any personal risk

Section 4. First-aid measures

or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	: MBS Transfection Kit Solution 1	Use an extinguishing agent suitable for the surrounding fire.
	MBS Transfection Kit Solution 2	Use an extinguishing agent suitable for the surrounding fire.
	MBS Transfection Kit Solution 3	Use an extinguishing agent suitable for the surrounding fire.
	pCMV β -Gal Control Plasmid	Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media	: MBS Transfection Kit Solution 1	None known.
	MBS Transfection Kit Solution 2	None known.
	MBS Transfection Kit Solution 3	None known.
	pCMV β -Gal Control Plasmid	None known.

Specific hazards arising from the chemical

:	MBS Transfection Kit Solution 1	In a fire or if heated, a pressure increase will occur and the container may burst.
	MBS Transfection Kit Solution 2	In a fire or if heated, a pressure increase will occur and the container may burst.
	MBS Transfection Kit Solution 3	In a fire or if heated, a pressure increase will occur and the container may burst.
	pCMV β -Gal Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products

:	MBS Transfection Kit Solution 1	Decomposition products may include the following materials: halogenated compounds metal oxide/oxides
	MBS Transfection Kit Solution 2	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds metal oxide/oxides
	MBS Transfection Kit Solution 3	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides phosphorus oxides
	pCMV β -Gal Control Plasmid	No specific data.

Section 5. Fire-fighting measures

Special protective actions for fire-fighters	: MBS Transfection Kit Solution 1	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	MBS Transfection Kit Solution 2	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	MBS Transfection Kit Soltuion 3	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	pCMV β -Gal Control Plasmid	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	: MBS Transfection Kit Solution 1	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	MBS Transfection Kit Solution 2	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	MBS Transfection Kit Soltuion 3	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	pCMV β -Gal Control Plasmid	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: MBS Transfection Kit Solution 1	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	MBS Transfection Kit Solution 2	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	MBS Transfection Kit Soltuion 3	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	pCMV β -Gal Control Plasmid	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding

Section 6. Accidental release measures

For emergency responders	: MBS Transfection Kit Solution 1	areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	MBS Transfection Kit Solution 2	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	MBS Transfection Kit Soltuion 3	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	pCMV β -Gal Control Plasmid	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions	: MBS Transfection Kit Solution 1	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	MBS Transfection Kit Solution 2	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	MBS Transfection Kit Soltuion 3	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	pCMV β -Gal Control Plasmid	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Methods for cleaning up	: MBS Transfection Kit Solution 1	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	MBS Transfection Kit Solution 2	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	MBS Transfection Kit Soltuion 3	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container.

Section 6. Accidental release measures

	disposal container. Dispose of via a licensed waste disposal contractor.
pCMV β -Gal 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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: MBS Transfection Kit Solution 1	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
MBS Transfection Kit Solution 2	Put on appropriate personal protective equipment (see Section 8).
MBS Transfection Kit Solution 3	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
pCMV β -Gal Control Plasmid	Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene

: MBS Transfection Kit Solution 1	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
MBS Transfection Kit Solution 2	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
MBS Transfection Kit Solution 3	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
pCMV β -Gal Control Plasmid	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities

MBS Transfection Kit
Solution 1

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

MBS Transfection Kit
Solution 2

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

MBS Transfection Kit
Solution 3

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

pCMV β -Gal Control Plasmid

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

Section 8. Exposure controls/personal protection

[Control parameters](#)

[Occupational exposure limits](#)

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
MBS Transfection Kit Soltuion 3 Ethanol	CA Alberta Provincial (Canada, 6/2018). OEL: 1000 ppm 8 hours. OEL: 1880 mg/m ³ 8 hours. CA British Columbia Provincial (Canada, 6/2023). STEL: 1000 ppm 15 minutes. CA Ontario Provincial (Canada, 6/2019). STEL: 1000 ppm 15 minutes. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 1250 ppm 15 minutes. TWA: 1000 ppm 8 hours. CA Quebec Provincial (Canada, 6/2022). STEV: 1000 ppm 15 minutes.

Biological exposure indices

No exposure indices known.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

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

Appearance

Physical state	: MBS Transfection Kit Solution 1	Liquid.
	MBS Transfection Kit Solution 2	Liquid.
	MBS Transfection Kit Soltuion 3	Liquid.
	pCMV β -Gal Control Plasmid	Liquid.
Color	: MBS Transfection Kit Solution 1	Not available.
	MBS Transfection Kit Solution 2	Not available.
	MBS Transfection Kit Soltuion 3	Not available.
	pCMV β -Gal Control Plasmid	Not available.
Odor	: MBS Transfection Kit Solution 1	Not available.
	MBS Transfection Kit Solution 2	Not available.
	MBS Transfection Kit Soltuion 3	Not available.
	pCMV β -Gal Control Plasmid	Not available.
Odor threshold	: MBS Transfection Kit Solution 1	Not available.
	MBS Transfection Kit Solution 2	Not available.
	MBS Transfection Kit Soltuion 3	Not available.
	pCMV β -Gal Control Plasmid	Not available.
pH	: MBS Transfection Kit Solution 1	Not available.
	MBS Transfection Kit Solution 2	6.95
	MBS Transfection Kit Soltuion 3	Not available.
	pCMV β -Gal Control Plasmid	Not available.
Melting point/freezing point	: MBS Transfection Kit Solution 1	Not available.
	MBS Transfection Kit Solution 2	0°C (32°F)
	MBS Transfection Kit Soltuion 3	Not available.
	pCMV β -Gal Control Plasmid	0°C (32°F)
Boiling point, initial boiling point, and boiling range	: MBS Transfection Kit Solution 1	Not available.
	MBS Transfection Kit Solution 2	100°C (212°F)
	MBS Transfection Kit Soltuion 3	Not available.
	pCMV β -Gal Control Plasmid	100°C (212°F)
Flash point	:	

Section 9. Physical and chemical properties and safety characteristics

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
MBS Transfection Kit Soltuion 3						
ethanol	9.7	49.5	Abel-Pensky	-	-	-

Evaporation rate : MBS Transfection Kit Solution 1 Not available.

MBS Transfection Kit Solution 2 Not available.

MBS Transfection Kit Soltuion 3 Not available.

pCMV β -Gal Control Plasmid Not available.

Flammability : MBS Transfection Kit Solution 1 Not applicable.

MBS Transfection Kit Solution 2 Not applicable.

MBS Transfection Kit Soltuion 3 Not applicable.

pCMV β -Gal Control Plasmid Not applicable.

Lower and upper explosion limit/flammability limit : MBS Transfection Kit Solution 1 Not available.

MBS Transfection Kit Solution 2 Not available.

MBS Transfection Kit Soltuion 3 Not available.

pCMV β -Gal Control Plasmid Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
MBS Transfection Kit Solution 1						
water	17.5	2.3	-	92.258	12.3	-
MBS Transfection Kit Solution 2						
water	17.5	2.3	-	92.258	12.3	-
MBS Transfection Kit Soltuion 3						
ethanol	42.94865	5.7	-	-	-	-
pCMV β-Gal Control Plasmid						
water	17.5	2.3	-	92.258	12.3	-

Section 9. Physical and chemical properties and safety characteristics

Relative vapor density : MBS Transfection Kit Solution 1 Not available.
MBS Transfection Kit Solution 2 Not available.
MBS Transfection Kit Soltuion 3 Not available.

Relative density : MBS Transfection Kit Solution 1 Not available.
MBS Transfection Kit Solution 2 Not available.
MBS Transfection Kit Soltuion 3 Not available.
pCMV β -Gal Control Plasmid Not available.

Solubility(ies)	Media	Result
	MBS Transfection Kit Solution 1 water	Soluble
	MBS Transfection Kit Solution 2 water	Soluble
	MBS Transfection Kit Soltuion 3 water	Soluble
	pCMV β-Gal Control Plasmid water	Soluble

Partition coefficient: n-octanol/water : MBS Transfection Kit Solution 1 Not applicable.
MBS Transfection Kit Solution 2 Not applicable.
MBS Transfection Kit Soltuion 3 Not applicable.
pCMV β -Gal Control Plasmid Not applicable.

Auto-ignition temperature	Ingredient name	°C	°F	Method
	MBS Transfection Kit Soltuion 3 ethanol	455	851	DIN 51794

Decomposition temperature : MBS Transfection Kit Solution 1 Not available.
MBS Transfection Kit Solution 2 Not available.
MBS Transfection Kit Soltuion 3 Not available.
pCMV β -Gal Control Plasmid Not available.

Viscosity : MBS Transfection Kit Solution 1 Not available.
MBS Transfection Kit Solution 2 Not available.
MBS Transfection Kit Soltuion 3 Not available.
pCMV β -Gal Control Plasmid Not available.

Particle characteristics

Section 9. Physical and chemical properties and safety characteristics

Median particle size	: MBS Transfection Kit Solution 1	Not applicable.
	MBS Transfection Kit Solution 2	Not applicable.
	MBS Transfection Kit Soltuion 3	Not applicable.
	pCMV β -Gal Control Plasmid	Not applicable.

Section 10. Stability and reactivity

Reactivity	: MBS Transfection Kit Solution 1	No specific test data related to reactivity available for this product or its ingredients.
	MBS Transfection Kit Solution 2	No specific test data related to reactivity available for this product or its ingredients.
	MBS Transfection Kit Soltuion 3	No specific test data related to reactivity available for this product or its ingredients.
	pCMV β -Gal Control Plasmid	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: MBS Transfection Kit Solution 1	The product is stable.
	MBS Transfection Kit Solution 2	The product is stable.
	MBS Transfection Kit Soltuion 3	The product is stable.
	pCMV β -Gal Control Plasmid	The product is stable.
Possibility of hazardous reactions	: MBS Transfection Kit Solution 1	Under normal conditions of storage and use, hazardous reactions will not occur.
	MBS Transfection Kit Solution 2	Under normal conditions of storage and use, hazardous reactions will not occur.
	MBS Transfection Kit Soltuion 3	Under normal conditions of storage and use, hazardous reactions will not occur.
	pCMV β -Gal Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: MBS Transfection Kit Solution 1	No specific data.
	MBS Transfection Kit Solution 2	No specific data.
	MBS Transfection Kit Soltuion 3	No specific data.
	pCMV β -Gal Control Plasmid	No specific data.
Incompatible materials	: MBS Transfection Kit Solution 1	May react or be incompatible with oxidizing materials.
	MBS Transfection Kit Solution 2	May react or be incompatible with oxidizing materials.
	MBS Transfection Kit Soltuion 3	May react or be incompatible with oxidizing materials.
	pCMV β -Gal Control Plasmid	May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity

Hazardous decomposition products	: MBS Transfection Kit Solution 1	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	MBS Transfection Kit Solution 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	MBS Transfection Kit Soltuion 3	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pCMV β-Gal Control Plasmid	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
MBS Transfection Kit Soltuion 3 Ethanol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	124700 mg/m ³ 7 g/kg	4 hours -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
MBS Transfection Kit Soltuion 3 Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	100 uL	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	IARC	NTP	ACGIH
MBS Transfection Kit Soltuion 3 Ethanol	1	-	A3

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)

Not available.

Section 11. Toxicological information

Aspiration hazard

Not available.

Information on the likely routes of exposure	: MBS Transfection Kit Solution 1	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
	MBS Transfection Kit Solution 2	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
	MBS Transfection Kit Soltuion 3	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
	pCMV β -Gal Control Plasmid	Not available.

Potential acute health effects

Eye contact	: MBS Transfection Kit Solution 1	Causes serious eye irritation.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Soltuion 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Inhalation	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Soltuion 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Skin contact	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Soltuion 3	Defatting to the skin. May cause skin dryness and irritation.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Ingestion	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Soltuion 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: MBS Transfection Kit Solution 1	Adverse symptoms may include the following: pain or irritation watering redness
	MBS Transfection Kit Solution 2	No specific data.
	MBS Transfection Kit Soltuion 3	No specific data.
	pCMV β -Gal Control Plasmid	No specific data.

Section 11. Toxicological information

Inhalation	: MBS Transfection Kit Solution 1	No specific data.
	MBS Transfection Kit Solution 2	No specific data.
	MBS Transfection Kit Soltuion 3	No specific data.
	pCMV β -Gal Control Plasmid	No specific data.
Skin contact	: MBS Transfection Kit Solution 1	No specific data.
	MBS Transfection Kit Solution 2	No specific data.
	MBS Transfection Kit Soltuion 3	Adverse symptoms may include the following:
		irritation dryness cracking
	pCMV β -Gal Control Plasmid	No specific data.
Ingestion	: MBS Transfection Kit Solution 1	No specific data.
	MBS Transfection Kit Solution 2	No specific data.
	MBS Transfection Kit Soltuion 3	No specific data.
	pCMV β -Gal Control Plasmid	No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Soltuion 3	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Carcinogenicity	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Soltuion 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.
Mutagenicity	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Soltuion 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Section 11. Toxicological information

Reproductive toxicity	: MBS Transfection Kit Solution 1	No known significant effects or critical hazards.
	MBS Transfection Kit Solution 2	No known significant effects or critical hazards.
	MBS Transfection Kit Soltuion 3	No known significant effects or critical hazards.
	pCMV β -Gal Control Plasmid	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
MBS Transfection Kit Solution 2 MBS Transfection Kit Solution 2	187500.0	N/A	N/A	N/A	N/A
MBS Transfection Kit Soltuion 3 Ethanol	7000	N/A	N/A	124.7	N/A

Other information	: MBS Transfection Kit Solution 2	Adverse symptoms may include the following: May cause skin sensitization.
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Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
MBS Transfection Kit Solution 1 Calcium chloride (CaCl ₂), dihydrate	Acute EC50 2900 mg/l Fresh water	Algae	72 hours
	Acute NOEC 2000 mg/l Fresh water	Daphnia	48 hours
MBS Transfection Kit Soltuion 3 Ethanol	Acute EC50 3306 mg/l Marine water	Algae - <i>Ulva pertusa</i>	96 hours
	Acute EC50 1074 mg/l Fresh water	Crustaceans - <i>Cypris subglobosa</i>	48 hours
	Acute EC50 2 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	48 hours
	Acute LC50 11000000 μ g/l Marine water	Fish - <i>Alburnus alburnus</i>	96 hours
	Chronic NOEC 4.995 mg/l Marine water	Algae - <i>Ulva pertusa</i>	96 hours
Chronic NOEC 100 μ l/L Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	21 days	

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
MBS Transfection Kit Soltuion 3 Ethanol	-	-	Readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
MBS Transfection Kit Soltuion 3 Ethanol	-0.35	0.5	Low

Mobility in soil

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

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

Section 13. Disposal considerations

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

Section 14. Transport information

TDG / IMDG / IATA : Not regulated.

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

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Section 15. Regulatory information

Not listed.

Inventory list

Canada : Not determined.

United States : Not determined.

Section 16. Other information

History

Date of issue/Date of revision : 03/28/2024

Date of previous issue : 03/30/2021

Version : 8

Key to abbreviations :

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

Procedure used to derive the classification

Classification	Justification
MBS Transfection Kit Solution 1 EYE IRRITATION - Category 2A	Calculation method
MBS Transfection Kit Soltuion 3 Health Hazards Not Otherwise Classified - Category 1	Calculation method

✔ Indicates information that has changed from previously issued version.

Notice to reader

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