

SAFETY DATA SHEET



Cre Recombinase Kit, Part Number 600270

Section 1. Identification

Product identifier : Cre Recombinase Kit, Part Number 600270
Part No. (Chemical Kit) : 600270
Part No. : Cre Recombinase 600270-51
 10X Cre Reaction Buffer 600270-52

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

Analytical reagent.

Cre Recombinase 30 μl (150 U 5 U/ μl)
 10X Cre Reaction Buffer 100 μl

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
 679 Springvale Road
 Mulgrave
 Victoria 3170, Australia
 1800 802 402

Emergency telephone number (with hours of operation) : CHEMTREC®: +(61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

10X Cre Reaction Buffer
 H319

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

Cre Recombinase

Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%

10X Cre Reaction Buffer

Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%

Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%

Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%

10X Cre Reaction Buffer

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 7.9%

GHS label elements

Hazard pictograms : 10X Cre Reaction Buffer



Signal word : Cre Recombinase No signal word.
 10X Cre Reaction Buffer WARNING

Hazard statements : Cre Recombinase No known significant effects or critical hazards.
 10X Cre Reaction Buffer H319 - Causes serious eye irritation.

Precautionary statements

Prevention : Cre Recombinase Not applicable.
 10X Cre Reaction Buffer P280 - Wear eye or face protection.
 P264 - Wash hands thoroughly after handling.

Section 2. Hazard(s) identification

| | | |
|--|--|--|
| Response | : Cre Recombinase 10X Cre Reaction Buffer | Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention. |
| Storage | : Cre Recombinase 10X Cre Reaction Buffer | Not applicable. Not applicable. |
| Disposal | : Cre Recombinase 10X Cre Reaction Buffer | Not applicable. Not applicable. |
| Supplemental label elements | : Cre Recombinase 10X Cre Reaction Buffer | Not applicable. Not applicable. |
| Other hazards which do not result in classification | : Cre Recombinase 10X Cre Reaction Buffer | None known. None known. |

Section 3. Composition and ingredient information

| | | |
|--------------------------|--|--------------------|
| Substance/mixture | : Cre Recombinase 10X Cre Reaction Buffer | Mixture Mixture |
|--------------------------|--|--------------------|

CAS number/other identifiers

| Ingredient name | % (w/w) | CAS number |
|---|-----------|------------|
| Cre Recombinase | | |
| Glycerol | ≥30 - ≤60 | 56-81-5 |
| 10X Cre Reaction Buffer | | |
| 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride | <10 | 1185-53-1 |
| Sodium chloride | ≤3 | 7647-14-5 |

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

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

Section 4. First aid measures

Description of necessary first aid measures

| | | |
|--------------------|-------------------------|---|
| Eye contact | : Cre Recombinase | 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. |
| | 10X Cre Reaction Buffer | 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. |
| Inhalation | : Cre Recombinase | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| | 10X Cre Reaction Buffer | 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 |

Section 4. First aid measures

| | |
|--|---|
| <p>Skin contact</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>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> <p>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</p> <p>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.</p> |
| <p>Ingestion</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</p> <p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p> |

Most important symptoms/effects, acute and delayed

Potential acute health effects

| | |
|--|---|
| <p>Eye contact</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>No known significant effects or critical hazards. Causes serious eye irritation.</p> |
| <p>Inhalation</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>No known significant effects or critical hazards.</p> |
| <p>Skin contact</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>No known significant effects or critical hazards.</p> |
| <p>Ingestion</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>No known significant effects or critical hazards.</p> |

Over-exposure signs/symptoms

| | |
|--|---|
| <p>Eye contact</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>No specific data.</p> <p>Adverse symptoms may include the following: pain or irritation watering redness</p> |
| <p>Inhalation</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>No specific data.</p> |
| <p>Skin contact</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>No specific data.</p> |
| <p>Ingestion</p> <p>: Cre Recombinase</p> <p>10X Cre Reaction Buffer</p> | <p>No specific data.</p> |

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

Section 4. First aid measures

| | | |
|-----------------------------------|--|--|
| Notes to physician | : <input checked="" type="checkbox"/> Cre Recombinase 10X Cre Reaction Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. 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. |
| Specific treatments | : <input checked="" type="checkbox"/> Cre Recombinase 10X Cre Reaction Buffer | No specific treatment. No specific treatment. |
| Protection of first-aiders | : <input checked="" type="checkbox"/> Cre Recombinase 10X Cre Reaction Buffer | No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

| | | |
|---|--|--|
| Suitable extinguishing media | : <input checked="" type="checkbox"/> Cre Recombinase 10X Cre Reaction Buffer | Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | : <input checked="" type="checkbox"/> Cre Recombinase 10X Cre Reaction Buffer | None known. None known. |
| Specific hazards arising from the chemical | : <input checked="" type="checkbox"/> Cre Recombinase 10X Cre Reaction Buffer | In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. |
| Hazardous thermal decomposition products | : <input checked="" type="checkbox"/> Cre Recombinase 10X Cre Reaction Buffer | Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides |
| Special protective actions for fire-fighters | : <input checked="" type="checkbox"/> Cre Recombinase 10X Cre Reaction Buffer | 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. 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. |

Section 5. Firefighting measures

| | | |
|---|-------------------------|---|
| Special protective equipment for fire-fighters | : Cre Recombinase | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| | 10X Cre Reaction Buffer | 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 | : Cre Recombinase | 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. |
| | 10X Cre Reaction Buffer | 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| For emergency responders | : Cre Recombinase | 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". |
| | 10X Cre Reaction Buffer | 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". |
| Environmental precautions | : Cre Recombinase | 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). |
| | 10X Cre Reaction Buffer | 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). |
| <u>Methods and material for containment and cleaning up</u> | | |
| Methods for cleaning up | : Cre Recombinase | 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. |
| | 10X Cre Reaction Buffer | 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 : Cre Recombinase
10X Cre Reaction Buffer

Put on appropriate personal protective equipment (see Section 8).
Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour 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.

Advice on general occupational hygiene : Cre Recombinase
10X Cre Reaction Buffer

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

Conditions for safe storage, including any incompatibilities : Cre Recombinase
10X Cre Reaction Buffer

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.
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.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|-----------------------------|---|
| Cre Recombinase Glycerol | Safe Work Australia (Australia, 1/2014). TWA: 10 mg/m ³ 8 hours. |

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

Section 8. Exposure controls and personal protection

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: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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

Section 9. Physical and chemical properties

Appearance

| | | |
|-------------------------|---------------------------|----------------|
| Physical state | : Cre Recombinase | Liquid. |
| | : 10X Cre Reaction Buffer | Liquid. |
| Colour | : Cre Recombinase | Not available. |
| | : 10X Cre Reaction Buffer | Not available. |
| Odour | : Cre Recombinase | Not available. |
| | : 10X Cre Reaction Buffer | Not available. |
| Odour threshold | : Cre Recombinase | Not available. |
| | : 10X Cre Reaction Buffer | Not available. |
| pH | : Cre Recombinase | 7.5 |
| | : 10X Cre Reaction Buffer | 7.5 |
| Melting point | : Cre Recombinase | Not available. |
| | : 10X Cre Reaction Buffer | Not available. |
| Boiling point | : Cre Recombinase | Not available. |
| | : 10X Cre Reaction Buffer | Not available. |
| Flash point | : Cre Recombinase | Not available. |
| | : 10X Cre Reaction Buffer | Not available. |
| Evaporation rate | : Cre Recombinase | Not available. |
| | : 10X Cre Reaction Buffer | Not available. |

Section 9. Physical and chemical properties

| | | |
|---|--|---|
| Flammability (solid, gas) | : Cre Recombinase 10X Cre Reaction Buffer | Not applicable. Not applicable. |
| Lower and upper explosive (flammable) limits | : Cre Recombinase 10X Cre Reaction Buffer | Not available. Not available. |
| Vapour pressure | : Cre Recombinase 10X Cre Reaction Buffer | Not available. Not available. |
| Vapour density | : Cre Recombinase 10X Cre Reaction Buffer | Not available. Not available. |
| Relative density | : Cre Recombinase 10X Cre Reaction Buffer | Not available. Not available. |
| Solubility | : Cre Recombinase 10X Cre Reaction Buffer | Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. |
| Partition coefficient: n-octanol/water | : Cre Recombinase 10X Cre Reaction Buffer | Not available. Not available. |
| Auto-ignition temperature | : Cre Recombinase 10X Cre Reaction Buffer | Not available. Not available. |
| Decomposition temperature | : Cre Recombinase 10X Cre Reaction Buffer | Not available. Not available. |
| Viscosity | : Cre Recombinase 10X Cre Reaction Buffer | Not available. Not available. |

Section 10. Stability and reactivity

| | | |
|---|--|--|
| Reactivity | : Cre Recombinase 10X Cre Reaction Buffer | No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | : Cre Recombinase 10X Cre Reaction Buffer | The product is stable. The product is stable. |
| Possibility of hazardous reactions | : Cre Recombinase 10X Cre Reaction Buffer | Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. |
| Conditions to avoid | : Cre Recombinase 10X Cre Reaction Buffer | No specific data. No specific data. |
| Incompatible materials | : Cre Recombinase 10X Cre Reaction Buffer | May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. |
| Hazardous decomposition products | : Cre Recombinase 10X Cre Reaction Buffer | Under normal conditions of storage and use, hazardous decomposition products should not be produced. 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 |
|---|-----------|---------|-------------|----------|
| <input checked="" type="checkbox"/> Cre Recombinase Glycerol | LD50 Oral | Rat | 12600 mg/kg | - |
| 10X Cre Reaction Buffer Sodium chloride | LD50 Oral | Rat | 3000 mg/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|--------------------------|---------|-------|-------------------------|-------------|
| <input checked="" type="checkbox"/> Cre Recombinase Glycerol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| 10X Cre Reaction Buffer Sodium chloride | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 10 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|---|------------|-------------------|------------------------------|
| 10X Cre Reaction Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride | Category 3 | Not applicable. | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Cre Recombinase Routes of entry anticipated: Oral, Dermal, Inhalation.
10X Cre Reaction Buffer Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Cre Recombinase No known significant effects or critical hazards.
10X Cre Reaction Buffer Causes serious eye irritation.

Section 11. Toxicological information

| | | |
|---------------------|--|--|
| Inhalation | : Cre Recombinase 10X Cre Reaction Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Skin contact | : Cre Recombinase 10X Cre Reaction Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Ingestion | : Cre Recombinase 10X Cre Reaction Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. |

Symptoms related to the physical, chemical and toxicological characteristics

| | | |
|---------------------|--|---|
| Eye contact | : Cre Recombinase 10X Cre Reaction Buffer | No specific data. Adverse symptoms may include the following: pain or irritation watering redness |
| Inhalation | : Cre Recombinase 10X Cre Reaction Buffer | No specific data. No specific data. |
| Skin contact | : Cre Recombinase 10X Cre Reaction Buffer | No specific data. No specific data. |
| Ingestion | : Cre Recombinase 10X Cre Reaction Buffer | No specific data. 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

Not available.

| | | |
|------------------------------|--|--|
| General | : Cre Recombinase 10X Cre Reaction Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Carcinogenicity | : Cre Recombinase 10X Cre Reaction Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Mutagenicity | : Cre Recombinase 10X Cre Reaction Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Teratogenicity | : Cre Recombinase 10X Cre Reaction Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Developmental effects | : Cre Recombinase 10X Cre Reaction Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Fertility effects | : Cre Recombinase 10X Cre Reaction Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. |

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|---|-------------------------------------|---|----------|
| Cre Recombinase Glycerol | Acute LC50 54000 mg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| 10X Cre Reaction Buffer Sodium chloride | Acute EC50 4.74 g/L Fresh water | Algae - Chlamydomonas reinhardtii | 96 hours |
| | Acute EC50 519.6 mg/l Fresh water | Crustaceans - Cypris subglobosa | 48 hours |
| | Acute IC50 6.87 g/L Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Acute LC50 1.56 g/L Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 1000000 µg/l Fresh water | Fish - Morone saxatilis - Larvae | 96 hours |
| | Chronic LC10 781 mg/l Fresh water | Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) | 3 weeks |
| | Chronic NOEC 6 g/L Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Chronic NOEC 0.314 g/L Fresh water | Daphnia - Daphnia pulex | 21 days |
| | Chronic NOEC 100 mg/l Fresh water | Fish - Gambusia holbrooki - Adult | 8 weeks |

Persistence and degradability

Not available.

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|------------------------------------|--------------------|-----|-----------|
| Cre Recombinase Glycerol | -1.76 | - | 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 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

ADG / IMDG / IATA : Not regulated as Dangerous Goods according to the ADG Code .

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 Annex II of Marpol and the IBC Code : Not available.

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

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

Section 16. Any other relevant information

History

Date of issue/Date of revision : 28/06/2017
Date of previous issue : 30/03/2016.
Version : 4

Key to abbreviations

: ADG = Australian Dangerous Goods
 ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 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)
 NOHSC = National Occupational Health and Safety Commission
 SUSMP = Standard Uniform Schedule of Medicine and Poisons
 UN = United Nations

Procedure used to derive the classification

| Classification | Justification |
|---|--------------------|
| 10X Cre Reaction Buffer Eye Irrit. 2A, H319 | Calculation method |

References : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.