

# SAFETY DATA SHEET



Dpn I Restriction Enzyme, Part Number 500402

## Section 1. Identification

**Product identifier** : Dpn I Restriction Enzyme, Part Number 500402  
**Part no. (chemical kit)** : 500402  
**Part no.** : Dpn I 500402-51  
 10X Universal Buffer 510000-50  
 10X Optimal Buffer 7 510000-57

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

**Identified uses** :  Analytical reagent.  
 Dpn I 0.02 ml (200 U 10 U/μl)  
 10X Universal Buffer 1 ml  
 10X Optimal Buffer 7 1 ml

**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

Dpn I  
 H320 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2B  
 10X Universal Buffer Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 4.5%  
 10X Optimal Buffer 7 Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2%

### GHS label elements

**Signal word** :  Dpn I WARNING  
 10X Universal Buffer No signal word.  
 10X Optimal Buffer 7 No signal word.  
**Hazard statements** :  Dpn I H320 - Causes eye irritation.  
 10X Universal Buffer No known significant effects or critical hazards.  
 10X Optimal Buffer 7 No known significant effects or critical hazards.

### Precautionary statements

**Prevention** : Dpn I Not applicable.  
 10X Universal Buffer Not applicable.  
 10X Optimal Buffer 7 Not applicable.  
**Response** :  Dpn I P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337 + P313 - If eye irritation persists: Get medical advice or attention.  
 10X Universal Buffer Not applicable.  
 10X Optimal Buffer 7 Not applicable.

## Section 2. Hazard(s) identification

<b>Storage</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Not applicable. Not applicable. Not applicable.
<b>Disposal</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Not applicable. Not applicable. Not applicable.
<b>Supplemental label elements</b>		
<b>Additional warning phrases</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Not applicable. Not applicable. Not applicable.
<b>Other hazards which do not result in classification</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	None known. None known. None known.

## Section 3. Composition and ingredient information

<b>Substance/mixture</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Mixture Mixture Mixture
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### CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
Dpn I		
Glycerol	≥30 - ≤60	56-81-5

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.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

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

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	: Dpn I  10X Universal Buffer  10X Optimal Buffer 7	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention. 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. 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.
<b>Inhalation</b>	: Dpn I	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.

## Section 4. First aid measures

	10X Universal Buffer	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.
	10X Optimal Buffer 7	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.
<b>Skin contact</b>	: Dpn I	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.
	10X Universal Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	10X Optimal Buffer 7	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	: Dpn I	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.
	10X Universal Buffer	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.
	10X Optimal Buffer 7	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

<b>Eye contact</b>	: Dpn I	Causes eye irritation.
	10X Universal Buffer	No known significant effects or critical hazards.
	10X Optimal Buffer 7	No known significant effects or critical hazards.
<b>Inhalation</b>	: Dpn I	No known significant effects or critical hazards.
	10X Universal Buffer	No known significant effects or critical hazards.
	10X Optimal Buffer 7	No known significant effects or critical hazards.
<b>Skin contact</b>	: Dpn I	No known significant effects or critical hazards.
	10X Universal Buffer	No known significant effects or critical hazards.
	10X Optimal Buffer 7	No known significant effects or critical hazards.
<b>Ingestion</b>	: Dpn I	No known significant effects or critical hazards.
	10X Universal Buffer	No known significant effects or critical hazards.
	10X Optimal Buffer 7	No known significant effects or critical hazards.

## Section 4. First aid measures

### Over-exposure signs/symptoms

<b>Eye contact</b>	: Dpn I	Adverse symptoms may include the following: irritation watering redness
	10X Universal Buffer	No specific data.
	10X Optimal Buffer 7	No specific data.
<b>Inhalation</b>	: Dpn I	No specific data.
	10X Universal Buffer	No specific data.
	10X Optimal Buffer 7	No specific data.
<b>Skin contact</b>	: Dpn I	No specific data.
	10X Universal Buffer	No specific data.
	10X Optimal Buffer 7	No specific data.
<b>Ingestion</b>	: Dpn I	No specific data.
	10X Universal Buffer	No specific data.
	10X Optimal Buffer 7	No specific data.

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

<b>Notes to physician</b>	: Dpn I	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	10X Universal Buffer	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.
	10X Optimal Buffer 7	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.
<b>Specific treatments</b>	: Dpn I	No specific treatment.
	10X Universal Buffer	No specific treatment.
	10X Optimal Buffer 7	No specific treatment.
<b>Protection of first-aiders</b>	: Dpn I	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.
	10X Universal Buffer	No action shall be taken involving any personal risk or without suitable training.
	10X Optimal Buffer 7	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	: Dpn I	Use an extinguishing agent suitable for the surrounding fire.
	10X Universal Buffer	Use an extinguishing agent suitable for the surrounding fire.
	10X Optimal Buffer 7	Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: Dpn I	None known.
	10X Universal Buffer	None known.
	10X Optimal Buffer 7	None known.

## Section 5. Firefighting measures

<b>Specific hazards arising from the chemical</b>	: Dpn I	In a fire or if heated, a pressure increase will occur and the container may burst.
	10X Universal Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	10X Optimal Buffer 7	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	: Dpn I	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	10X Universal Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides metal oxide/oxides
	10X Optimal Buffer 7	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
<b>Special protective actions for fire-fighters</b>	: Dpn I	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.
	10X Universal 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.
	10X Optimal Buffer 7	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.
<b>Special protective equipment for fire-fighters</b>	: Dpn I	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	10X Universal Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	10X Optimal Buffer 7	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

<b>For non-emergency personnel</b>	: Dpn I	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.
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## Section 6. Accidental release measures

10X Universal 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. Put on appropriate personal protective equipment.

10X Optimal Buffer 7  
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 : Dpn I

10X Universal 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".  
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 Optimal Buffer 7  
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 : Dpn I

10X Universal 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).  
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 Optimal Buffer 7  
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).

### Methods and material for containment and cleaning up

#### Methods for cleaning up : Dpn I

10X Universal 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.  
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 Optimal Buffer 7  
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

<b>Protective measures</b>	: Dpn I	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.
	10X Universal Buffer	Put on appropriate personal protective equipment (see Section 8).
	10X Optimal Buffer 7	Put on appropriate personal protective equipment (see Section 8).

<b>Advice on general occupational hygiene</b>	: Dpn I	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.
	10X Universal 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.
	10X Optimal Buffer 7	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.

<b>Conditions for safe storage, including any incompatibilities</b>	: Dpn I	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.
	10X Universal 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.
	10X Optimal Buffer 7	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

## Section 7. Handling and storage

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
Dpn I Glycerol	<b>Safe Work Australia (Australia, 10/2022).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.

### 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: 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 and safety characteristics

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

### Appearance


<b>Physical state</b>	:	Dpn I	Liquid.
		10X Universal Buffer	Liquid.
		10X Optimal Buffer 7	Liquid.
<b>Colour</b>	:	Dpn I	Not available.
		10X Universal Buffer	Not available.
		10X Optimal Buffer 7	Not available.
<b>Odour</b>	:	Dpn I	Not available.
		10X Universal Buffer	Not available.
		10X Optimal Buffer 7	Not available.
<b>Odour threshold</b>	:	Dpn I	Not available.
		10X Universal Buffer	Not available.
		10X Optimal Buffer 7	Not available.
<b>pH</b>	:	Dpn I	7.5
		10X Universal Buffer	7.6
		10X Optimal Buffer 7	7.7
<b>Melting point/freezing point</b>	:	Dpn I	Not available.
		10X Universal Buffer	Not available.
		10X Optimal Buffer 7	Not available.
<b>Boiling point, initial boiling point, and boiling range</b>	:	Dpn I	Not available.
		10X Universal Buffer	Not available.
		10X Optimal Buffer 7	Not available.

<b>Flash point</b>	:		<b>Closed cup</b>			<b>Open cup</b>		
		<b>Ingredient name</b>	<b>°C</b>	<b>°F</b>	<b>Method</b>	<b>°C</b>	<b>°F</b>	<b>Method</b>
		 <b>Dpn I</b>						
		Glycerol	-	-	-	177	350.6	-

<b>Evaporation rate</b>	:	Dpn I	Not available.
		10X Universal Buffer	Not available.
		10X Optimal Buffer 7	Not available.

<b>Flammability</b>	:	Dpn I	Not applicable.
		10X Universal Buffer	Not applicable.
		10X Optimal Buffer 7	Not applicable.

<b>Lower and upper explosion limit/flammability limit</b>	:	Dpn I	Not available.
		10X Universal Buffer	Not available.
		10X Optimal Buffer 7	Not available.

<b>Vapour pressure</b>	:		<b>Vapour Pressure at 20°C</b>			<b>Vapour pressure at 50°C</b>		
		<b>Ingredient name</b>	<b>mm Hg</b>	<b>kPa</b>	<b>Method</b>	<b>mm Hg</b>	<b>kPa</b>	<b>Method</b>
		 <b>Dpn I</b>						
		water	17.5	2.3	-	92.258	12.3	-
		Glycerol	0.000075	0.00001	-	0.0025	0.00033	-
		<b>10X Universal Buffer</b>						
		water	17.5	2.3	-	92.258	12.3	-
		<b>10X Optimal Buffer 7</b>						

## Section 9. Physical and chemical properties and safety characteristics

	water	17.5	2.3	-	92.258	12.3	-
<b>Relative vapour density</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Not available. Not available. Not available.					
<b>Relative density</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Not available. Not available. Not available.					
<b>Solubility(ies)</b>	: <b>Media</b>	<b>Result</b>					
	Dpn I water	Soluble					
	<b>10X Universal Buffer</b> water	Soluble					
	<b>10X Optimal Buffer 7</b> water	Soluble					
<b>Partition coefficient: n-octanol/water</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Not applicable. Not applicable. Not applicable.					
<b>Auto-ignition temperature</b>	: <b>Ingredient name</b>	<b>°C</b>	<b>°F</b>	<b>Method</b>			
	Dpn I						
	Glycerol	370	698	-			
<b>Decomposition temperature</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Not available. Not available. Not available.					
<b>Viscosity</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Not available. Not available. Not available.					
<b>Particle characteristics</b>							
<b>Median particle size</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Not applicable. Not applicable. Not applicable.					

## Section 10. Stability and reactivity

<b>Reactivity</b>	: Dpn I  10X Universal Buffer  10X Optimal Buffer 7	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. No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	The product is stable. The product is stable. The product is stable.
<b>Possibility of hazardous reactions</b>	: Dpn I  10X Universal Buffer  10X Optimal Buffer 7	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No specific data. No specific data. No specific data.

## Section 10. Stability and reactivity

<b>Incompatible materials</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
<b>Hazardous decomposition products</b>	: Dpn I  10X Universal Buffer  10X Optimal Buffer 7	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. 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
Dpn I Glycerol	LD50 Oral	Rat	12600 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Dpn I Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

#### Sensitisation

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)

Not available.

#### Aspiration hazard

Not available.

<b>Information on likely routes of exposure</b>	: <input checked="" type="checkbox"/> Dpn I  10X Universal Buffer  10X Optimal Buffer 7	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes. Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes. Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
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## Section 11. Toxicological information

### Potential acute health effects

<b>Eye contact</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	Causes eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Inhalation</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	: Dpn I  10X Universal Buffer 10X Optimal Buffer 7	Adverse symptoms may include the following: irritation watering redness No specific data. No specific data.
<b>Inhalation</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No specific data. No specific data. No specific data.
<b>Skin contact</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No specific data. No specific data. No specific data.
<b>Ingestion</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No specific data. 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

<b>General</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Mutagenicity</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Reproductive toxicity</b>	: Dpn I 10X Universal Buffer 10X Optimal Buffer 7	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

## Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Dpn I Glycerol	12600	N/A	N/A	N/A	N/A

**Other information** : 10X Optimal Buffer 7

Adverse symptoms may include the following: May cause skin sensitisation.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Dpn I Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Dpn I Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Dpn I Glycerol	-1.76	-	Low

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : 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 IMO instruments** : Not available.

## Section 15. Regulatory information

### Standard for the Uniform Scheduling of Medicines 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

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

**Australia** : Not determined.

**New Zealand** : All components are listed or exempted.

**United States** : All components are active or exempted.

## Section 16. Any other relevant information

### History

**Date of issue/Date of revision** : 21/03/2024

**Date of previous issue** : 30/03/2021

**Version** : 6

### Key to abbreviations

ADG = Australian Dangerous Goods  
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
 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)  
 N/A = Not available  
 SUSMP = Standard Uniform Schedule of Medicine and Poisons  
 UN = United Nations



## Section 16. Any other relevant information

### [Procedure used to derive the classification](#)

Classification	Justification
Dpn I SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2B	Calculation method

✔ Indicates information that has changed from previously issued version.

### [Notice to reader](#)

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