

SAFETY DATA SHEET



HaloPlex ILM Pre-Pack - 96 Reactions, Part Number 5190-8636

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

1.1 Product identifier

Product name	: HaloPlex ILM Pre-Pack - 96 Reactions, Part Number 5190-8636
Part no. (chemical kit)	: 5190-8636
Part no.	: <input checked="" type="checkbox"/> RE Buffer 5190-4997
	SSC Buffer 5190-5356
	BSA Solution 5190-5409
	DNA Ligase 5190-7830
	Ligation Solution 5190-7833
	Wash Solution 5190-4994
	Capture Solution 5190-4995
	Primer 1 5190-5354
	Primer 2 5190-5355
	HaloPlex Indexing Primer A01 - H12 5190-8025
	Hybridization Solution 5190-5352
	Enrichment Control DNA 5190-5353
	Enzyme Strip 1 5190-5357
	Enzyme Strip 2 5190-5358

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

Identified uses	: <input checked="" type="checkbox"/> Analytical reagent.
	<input checked="" type="checkbox"/> RE Buffer 4.8 ml (96 reactions)
	SSC Buffer 2 x 8.15 ml (96 reactions)
	BSA Solution 0.115 ml (96 reactions)
	DNA Ligase 0.34 ml (96 reactions)
	Ligation Solution 6.5 ml (96 reactions)
	Wash Solution 14 ml (96 reactions)
	Capture Solution 4.8 ml (96 reactions)
	Primer 1 0.13 ml (96 reactions)
	Primer 2 0.13 ml (96 reactions)
	HaloPlex Indexing Primer A01 - H12 96 x 0.015 ml
	Hybridization Solution 7 ml (96 reactions)
	Enrichment Control DNA 0.48 ml (96 reactions)
	Enzyme Strip 1 8 x 0.075 ml (96 reactions)
	Enzyme Strip 2 8 x 0.075 ml (96 reactions)
Uses advised against	: None known.

1.3 Details of the supplier of the safety data sheet


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

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

1.4 Emergency telephone number

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

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**


Product definition	:	 E Buffer	Mixture
		SSC Buffer	Mixture
		BSA Solution	Mixture
		DNA Ligase	Mixture
		Ligation Solution	Mixture
		Wash Solution	Mixture
		Capture Solution	Mixture
		Primer 1	Mixture
		Primer 2	Mixture
		HaloPlex Indexing	Mixture
		Primer A01 - H12	
		Hybridization Solution	Mixture
		Enrichment Control DNA	Mixture
		Enzyme Strip 1	Mixture
		Enzyme Strip 2	Mixture

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

H351	CARCINOGENICITY	Category 2
H360	REPRODUCTIVE TOXICITY	Category 1B
H373	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	Category 2

Hybridization Solution

H351	CARCINOGENICITY	Category 2
H360	REPRODUCTIVE TOXICITY	Category 1B
H373	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	Category 2

 E Buffer	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
SSC Buffer	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
BSA Solution	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
DNA Ligase	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Ligation Solution	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Wash Solution	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Capture Solution	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Primer 1	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Primer 2	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
HaloPlex Indexing Primer A01 - H12	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Hybridization Solution	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Enrichment Control DNA	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Enzyme Strip 1	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
Enzyme Strip 2	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.



SECTION 2: Hazards identification

Ingredients of unknown toxicity	BSA Solution	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%
	DNA Ligase	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 30 - 60%
	Wash Solution	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%
	Capture Solution	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%
	Hybridization Solution	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30%
	Enzyme Strip 1	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 30 - 60%
	Enzyme Strip 2	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 30 - 60%

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

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

2.2 Label elements

Hazard pictograms	Wash Solution	
	Hybridization Solution	

Signal word	BE Buffer	No signal word.
	SSC Buffer	No signal word.
	BSA Solution	No signal word.
	DNA Ligase	No signal word.
	Ligation Solution	No signal word.
	Wash Solution	Danger
	Capture Solution	No signal word.
	Primer 1	No signal word.
	Primer 2	No signal word.
	HaloPlex Indexing	No signal word.
	Primer A01 - H12	No signal word.
	Hybridization Solution	Danger
	Enrichment Control DNA	No signal word.
	Enzyme Strip 1	No signal word.
	Enzyme Strip 2	No signal word.

Hazard statements	BE Buffer	No known significant effects or critical hazards.
	SSC Buffer	No known significant effects or critical hazards.
	BSA Solution	No known significant effects or critical hazards.
	DNA Ligase	No known significant effects or critical hazards.
	Ligation Solution	No known significant effects or critical hazards.
	Wash Solution	H351 - Suspected of causing cancer. H360 - May damage fertility or the unborn child. H373 - May cause damage to organs through prolonged or repeated exposure.
	Capture Solution	No known significant effects or critical hazards.
	Primer 1	No known significant effects or critical hazards.
	Primer 2	No known significant effects or critical hazards.
	HaloPlex Indexing	No known significant effects or critical hazards.
	Primer A01 - H12	No known significant effects or critical hazards.
	Hybridization Solution	H351 - Suspected of causing cancer. H360 - May damage fertility or the unborn child. H373 - May cause damage to organs through prolonged or repeated exposure.
	Enrichment Control DNA	No known significant effects or critical hazards.

SECTION 2: Hazards identification

Enzyme Strip 1	No known significant effects or critical hazards.
Enzyme Strip 2	No known significant effects or critical hazards.

Precautionary statements**Prevention**

: RE Buffer	Not applicable.
SSC Buffer	Not applicable.
BSA Solution	Not applicable.
DNA Ligase	Not applicable.
Ligation Solution	Not applicable.
Wash Solution	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection. P260 - Do not breathe vapour.
Capture Solution	Not applicable.
Primer 1	Not applicable.
Primer 2	Not applicable.
HaloPlex Indexing	Not applicable.
Primer A01 - H12	
Hybridization Solution	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection. P260 - Do not breathe vapour.






Response

: RE Buffer	Not applicable.
SSC Buffer	Not applicable.
BSA Solution	Not applicable.
DNA Ligase	Not applicable.
Ligation Solution	Not applicable.
Wash Solution	P308 + P313 - IF exposed or concerned: Get medical advice or attention.
Capture Solution	Not applicable.
Primer 1	Not applicable.
Primer 2	Not applicable.
HaloPlex Indexing	Not applicable.
Primer A01 - H12	
Hybridization Solution	P308 + P313 - IF exposed or concerned: Get medical advice or attention.
Enrichment Control DNA	Not applicable.
Enzyme Strip 1	Not applicable.
Enzyme Strip 2	Not applicable.

Storage

: RE Buffer	Not applicable.
SSC Buffer	Not applicable.
BSA Solution	Not applicable.
DNA Ligase	Not applicable.
Ligation Solution	Not applicable.
Wash Solution	Not applicable.
Capture Solution	Not applicable.
Primer 1	Not applicable.
Primer 2	Not applicable.
HaloPlex Indexing	Not applicable.
Primer A01 - H12	
Hybridization Solution	Not applicable.
Enrichment Control DNA	Not applicable.
Enzyme Strip 1	Not applicable.
Enzyme Strip 2	Not applicable.

SECTION 2: Hazards identification

Disposal	 RE Buffer	Not applicable.
	SSC Buffer	Not applicable.
	BSA Solution	Not applicable.
	DNA Ligase	Not applicable.
	Ligation Solution	Not applicable.
	Wash Solution	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Capture Solution	Not applicable.
	Primer 1	Not applicable.
	Primer 2	Not applicable.
	HaloPlex Indexing Primer A01 - H12	Not applicable.
	Hybridization Solution	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Enrichment Control DNA	Not applicable.
	Enzyme Strip 1	Not applicable.
	Enzyme Strip 2	Not applicable.
Hazardous ingredients	 Wash Solution	formamide
	Hybridization Solution	formamide
Supplemental label elements	 RE Buffer	Not applicable.
	SSC Buffer	Not applicable.
	BSA Solution	Safety data sheet available on request.
	DNA Ligase	Safety data sheet available on request.
	Ligation Solution	Not applicable.
	Wash Solution	Not applicable.
	Capture Solution	Not applicable.
	Primer 1	Not applicable.
	Primer 2	Not applicable.
	HaloPlex Indexing Primer A01 - H12	Not applicable.
	Hybridization Solution	Not applicable.
	Enrichment Control DNA	Not applicable.
	Enzyme Strip 1	Safety data sheet available on request.
	Enzyme Strip 2	Safety data sheet available on request.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	 RE Buffer	Not applicable.
	SSC Buffer	Not applicable.
	BSA Solution	Not applicable.
	DNA Ligase	Not applicable.
	Ligation Solution	Not applicable.
	Wash Solution	Restricted to professional users.
	Capture Solution	Not applicable.
	Primer 1	Not applicable.
	Primer 2	Not applicable.
	HaloPlex Indexing Primer A01 - H12	Not applicable.
	Hybridization Solution	Restricted to professional users.
	Enrichment Control DNA	Not applicable.
	Enzyme Strip 1	Not applicable.
	Enzyme Strip 2	Not applicable.
<u>Special packaging requirements</u>		
Containers to be fitted with child-resistant fastenings	 RE Buffer	Not applicable.
	SSC Buffer	Not applicable.
	BSA Solution	Not applicable.
	DNA Ligase	Not applicable.
	Ligation Solution	Not applicable.
	Wash Solution	Not applicable.
	Capture Solution	Not applicable.
	Primer 1	Not applicable.
	Primer 2	Not applicable.
	HaloPlex Indexing Primer A01 - H12	Not applicable.
	Hybridization Solution	Not applicable.

SECTION 2: Hazards identification**Tactile warning of danger**

Enrichment Control DNA	Not applicable.
Enzyme Strip 1	Not applicable.
Enzyme Strip 2	Not applicable.
RE Buffer	Not applicable.
SSC Buffer	Not applicable.
BSA Solution	Not applicable.
DNA Ligase	Not applicable.
Ligation Solution	Not applicable.
Wash Solution	Not applicable.
Capture Solution	Not applicable.
Primer 1	Not applicable.
Primer 2	Not applicable.
HaloPlex Indexing	Not applicable.
Primer A01 - H12	Not applicable.
Hybridization Solution	Not applicable.
Enrichment Control DNA	Not applicable.
Enzyme Strip 1	Not applicable.
Enzyme Strip 2	Not applicable.

2.3 Other hazards**Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII**

RE Buffer	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
SSC Buffer	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
BSA Solution	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
DNA Ligase	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Ligation Solution	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Wash Solution	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Capture Solution	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Primer 1	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Primer 2	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
HaloPlex Indexing	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Primer A01 - H12	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Hybridization Solution	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Enrichment Control DNA	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Enzyme Strip 1	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Enzyme Strip 2	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification

RE Buffer	None known.
SSC Buffer	None known.
BSA Solution	None known.
DNA Ligase	None known.
Ligation Solution	None known.
Wash Solution	None known.
Capture Solution	None known.
Primer 1	None known.
Primer 2	None known.
HaloPlex Indexing	None known.
Primer A01 - H12	None known.
Hybridization Solution	None known.
Enrichment Control DNA	None known.
Enzyme Strip 1	None known.

SECTION 2: Hazards identification

Substances identified as having endocrine disruptor properties	Enzyme Strip 2	None known.
	Ingredient name	Impact
	DNA Ligase	
	Ligation Solution	
	Poly(oxy-1,2-ethanediyl), .alpha.-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	Environment
	Poly(oxy-1,2-ethanediyl), .alpha.-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	Environment

SECTION 3: Composition/information on ingredients

3.1 Substances	RE Buffer	Mixture
	SSC Buffer	Mixture
	BSA Solution	Mixture
	DNA Ligase	Mixture
	Ligation Solution	Mixture
	Wash Solution	Mixture
	Capture Solution	Mixture
	Primer 1	Mixture
	Primer 2	Mixture
	HaloPlex Indexing Primer A01 - H12	Mixture
	Hybridization Solution	Mixture
	Enrichment Control DNA	Mixture
	Enzyme Strip 1	Mixture
	Enzyme Strip 2	Mixture

Product/ingredient name	Identifiers	%	Classification	Type
BSA Solution				
Glycerol	UK (GB) REACH #: Annex V REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≤10	Not classified.	[1]
DNA Ligase				
Glycerol	UK (GB) REACH #: Annex V REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
Poly(oxy-1,2-ethanediyl), .alpha.-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	CAS: 9036-19-5	<0.25	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=1)	[1] [3]
Ligation Solution				
Poly(oxy-1,2-ethanediyl), .alpha.-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	CAS: 9036-19-5	<0.25	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=1)	[1] [2]
Wash Solution				
Formamide	EC: 200-842-0 CAS: 75-12-7	≥10 - ≤25	Carc. 2, H351 Repr. 1B, H360 STOT RE 2, H373 (blood) (oral)	[1] [2]

SECTION 3: Composition/information on ingredients

Hybridization Solution Formamide	EC: 200-842-0 CAS: 75-12-7	≥25 - ≤50	Carc. 2, H351 Repr. 1B, H360 STOT RE 2, H373 (blood) (oral)	[1] [2]
Enzyme Strip 1 Glycerol	UK (GB) REACH #: Annex V REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[1]
Enzyme Strip 2 Glycerol	UK (GB) REACH #: Annex V REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified. See Section 16 for the full text of the H statements declared above.	[1]

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

Type

BSA Solution	[1] Substance with a workplace exposure limit
DNA Ligase	[1] Substance classified with a health or environmental hazard
	[2] Substance with a workplace exposure limit
	[3] Substance of equivalent concern
Ligation Solution	[1] Substance classified with a health or environmental hazard
	[2] Substance of equivalent concern
Wash Solution	[1] Substance classified with a health or environmental hazard
	[2] Substance with a workplace exposure limit
Hybridization Solution	[1] Substance classified with a health or environmental hazard
	[2] Substance with a workplace exposure limit
Enzyme Strip 1	[1] Substance with a workplace exposure limit
Enzyme Strip 2	[1] Substance with a workplace exposure limit

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: RE Buffer	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.
	SSC Buffer	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.
	BSA Solution	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.
	DNA Ligase	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.
	Ligation Solution	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.
	Wash Solution	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.
	Capture Solution	Immediately flush eyes with plenty of water, occasionally

SECTION 4: First aid measures

	Primer 1	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.
	Primer 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.
	HaloPlex Indexing Primer A01 - H12	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.
	Hybridization Solution	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.
	Enrichment Control DNA	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.
	Enzyme Strip 1	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.
	Enzyme Strip 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.
Inhalation	: RE Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	SSC Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	BSA Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	DNA Ligase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Ligation Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Wash Solution	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 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.
	Capture Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Primer 1	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Primer 2	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	HaloPlex Indexing Primer A01 - H12	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Hybridization Solution	Remove victim to fresh air and keep at rest in a position

SECTION 4: First aid measures

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 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.

Enrichment Control DNA Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Enzyme Strip 1 Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Enzyme Strip 2 Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact

: RE Buffer

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

SSC Buffer

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

BSA Solution

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

DNA Ligase

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ligation Solution

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Wash Solution

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Capture Solution

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Primer 1

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Primer 2

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

HaloPlex Indexing
Primer A01 - H12

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Hybridization Solution

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Enrichment Control DNA

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Enzyme Strip 1

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if

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Enzyme Strip 2		symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
: RE 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.
SSC 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.
BSA Solution		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.
DNA Ligase		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.
Ligation Solution		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.
Wash Solution		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. 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.
Capture Solution		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.
Primer 1		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.
Primer 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.
HaloPlex Indexing Primer A01 - H12		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.
Hybridization Solution		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.

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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. 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.

Enrichment Control DNA 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.

Enzyme Strip 1 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.

Enzyme Strip 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.

Protection of first-aiders : RE Buffer

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

SSC Buffer

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

BSA Solution

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

DNA Ligase

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

Ligation Solution

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

Wash Solution

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Capture Solution

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

Primer 1

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

Primer 2

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

HaloPlex Indexing
Primer A01 - H12
Hybridization Solution

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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Enrichment Control DNA

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

Enzyme Strip 1

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

Enzyme Strip 2

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

4.2 Most important symptoms and effects, both acute and delayed**Over-exposure signs/symptoms**

SECTION 4: First aid measures

Eye contact	:	RE Buffer	No specific data.
		SSC Buffer	No specific data.
		BSA Solution	No specific data.
		DNA Ligase	No specific data.
		Ligation Solution	No specific data.
		Wash Solution	No specific data.
		Capture Solution	No specific data.
		Primer 1	No specific data.
		Primer 2	No specific data.
		HaloPlex Indexing	No specific data.
		Primer A01 - H12	No specific data.
		Hybridization Solution	No specific data.
		Enrichment Control DNA	No specific data.
		Enzyme Strip 1	No specific data.
		Enzyme Strip 2	No specific data.
Inhalation	:	RE Buffer	No specific data.
		SSC Buffer	No specific data.
		BSA Solution	No specific data.
		DNA Ligase	No specific data.
		Ligation Solution	No specific data.
		Wash Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
		Capture Solution	No specific data.
		Primer 1	No specific data.
		Primer 2	No specific data.
		HaloPlex Indexing	No specific data.
		Primer A01 - H12	No specific data.
		Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
		Enrichment Control DNA	No specific data.
		Enzyme Strip 1	No specific data.
		Enzyme Strip 2	No specific data.
Skin contact	:	RE Buffer	No specific data.
		SSC Buffer	No specific data.
		BSA Solution	No specific data.
		DNA Ligase	No specific data.
		Ligation Solution	No specific data.
		Wash Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
		Capture Solution	No specific data.
		Primer 1	No specific data.
		Primer 2	No specific data.
		HaloPlex Indexing	No specific data.
		Primer A01 - H12	No specific data.
		Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
		Enrichment Control DNA	No specific data.
		Enzyme Strip 1	No specific data.
		Enzyme Strip 2	No specific data.

SECTION 4: First aid measures

Ingestion	:	RE Buffer	No specific data.
		SSC Buffer	No specific data.
		BSA Solution	No specific data.
		DNA Ligase	No specific data.
		Ligation Solution	No specific data.
		Wash Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
		Capture Solution	No specific data.
		Primer 1	No specific data.
		Primer 2	No specific data.
		HaloPlex Indexing	No specific data.
		Primer A01 - H12	
		Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
		Enrichment Control DNA	No specific data.
		Enzyme Strip 1	No specific data.
		Enzyme Strip 2	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	RE Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		SSC Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		BSA Solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		DNA Ligase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Ligation Solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Wash Solution	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.
		Capture Solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Primer 1	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Primer 2	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		HaloPlex Indexing	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Primer A01 - H12	
		Hybridization Solution	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.
		Enrichment Control DNA	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Enzyme Strip 1	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Enzyme Strip 2	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	:	RE Buffer	No specific treatment.
		SSC Buffer	No specific treatment.
		BSA Solution	No specific treatment.
		DNA Ligase	No specific treatment.
		Ligation Solution	No specific treatment.
		Wash Solution	No specific treatment.
		Capture Solution	No specific treatment.
		Primer 1	No specific treatment.
		Primer 2	No specific treatment.
		HaloPlex Indexing	No specific treatment.

SECTION 4: First aid measures

Primer A01 - H12	
Hybridization Solution	No specific treatment.
Enrichment Control DNA	No specific treatment.
Enzyme Strip 1	No specific treatment.
Enzyme Strip 2	No specific treatment.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media	:	RE Buffer	Use an extinguishing agent suitable for the surrounding fire.
		SSC Buffer	Use an extinguishing agent suitable for the surrounding fire.
		BSA Solution	Use an extinguishing agent suitable for the surrounding fire.
		DNA Ligase	Use an extinguishing agent suitable for the surrounding fire.
		Ligation Solution	Use an extinguishing agent suitable for the surrounding fire.
		Wash Solution	Use an extinguishing agent suitable for the surrounding fire.
		Capture Solution	Use an extinguishing agent suitable for the surrounding fire.
		Primer 1	Use an extinguishing agent suitable for the surrounding fire.
		Primer 2	Use an extinguishing agent suitable for the surrounding fire.
		HaloPlex Indexing	Use an extinguishing agent suitable for the surrounding fire.
		Primer A01 - H12	
		Hybridization Solution	Use an extinguishing agent suitable for the surrounding fire.
		Enrichment Control DNA	Use an extinguishing agent suitable for the surrounding fire.
		Enzyme Strip 1	Use an extinguishing agent suitable for the surrounding fire.
		Enzyme Strip 2	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	RE Buffer	None known.
		SSC Buffer	None known.
		BSA Solution	None known.
		DNA Ligase	None known.
		Ligation Solution	None known.
		Wash Solution	None known.
		Capture Solution	None known.
		Primer 1	None known.
		Primer 2	None known.
		HaloPlex Indexing	None known.
		Primer A01 - H12	
		Hybridization Solution	None known.
		Enrichment Control DNA	None known.
		Enzyme Strip 1	None known.
		Enzyme Strip 2	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	:	RE Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
		SSC Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
		BSA Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
		DNA Ligase	In a fire or if heated, a pressure increase will occur and the container may burst.
		Ligation Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
		Wash Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
		Capture Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
		Primer 1	In a fire or if heated, a pressure increase will occur and the container may burst.
		Primer 2	In a fire or if heated, a pressure increase will occur and the container may burst.
		HaloPlex Indexing	In a fire or if heated, a pressure increase will occur and the container may burst.
		Primer A01 - H12	
		Hybridization Solution	In a fire or if heated, a pressure increase will occur and the container may burst.

SECTION 5: Firefighting measures**Hazardous combustion products**

Enrichment Control DNA	In a fire or if heated, a pressure increase will occur and the container may burst.
Enzyme Strip 1	In a fire or if heated, a pressure increase will occur and the container may burst.
Enzyme Strip 2	In a fire or if heated, a pressure increase will occur and the container may burst.
RE Buffer	No specific data.
SSC Buffer	No specific data.
BSA Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide
DNA Ligase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Ligation Solution	No specific data.
Wash Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
Capture Solution	Decomposition products may include the following materials: halogenated compounds metal oxide/oxides
Primer 1	No specific data.
Primer 2	No specific data.
HaloPlex Indexing Primer A01 - H12	No specific data.
Hybridization Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
Enrichment Control DNA	No specific data.
Enzyme Strip 1	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Enzyme Strip 2	Decomposition products may include the following materials: carbon dioxide carbon monoxide

5.3 Advice for firefighters**Special protective actions for fire-fighters**

RE 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.
SSC 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.
BSA Solution	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.
DNA Ligase	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.
Ligation Solution	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.
Wash Solution	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.
Capture Solution	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be


SECTION 5: Firefighting measures**Special protective
equipment for fire-
fighters**

Primer 1	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.
Primer 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.
HaloPlex Indexing Primer A01 - H12	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.
Hybridization Solution	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.
Enrichment Control DNA	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.
Enzyme Strip 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.
Enzyme Strip 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.
: RE Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
SSC Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
BSA Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
DNA Ligase	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Ligation Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Wash Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Capture Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Primer 1	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Primer 2	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
HaloPlex Indexing Primer A01 - H12	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Hybridization Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Enrichment Control DNA	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Enzyme Strip 1	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Enzyme Strip 2	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel	:  RE 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.
	SSC 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.
	BSA Solution	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.
	DNA Ligase	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.
	Ligation Solution	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.
	Wash Solution	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.
	Capture Solution	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.
	Primer 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 spilt material. Put on appropriate personal protective equipment.
	Primer 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 spilt material. Put on appropriate personal protective equipment.
	HaloPlex Indexing Primer A01 - H12	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.
	Hybridization Solution	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.
	Enrichment Control DNA	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do

SECTION 6: Accidental release measures**For emergency responders**

		not touch or walk through spilt material. Put on appropriate personal protective equipment.
Enzyme Strip 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 spilt material. Put on appropriate personal protective equipment.
Enzyme Strip 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 spilt material. Put on appropriate personal protective equipment.
	:  RE 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".
SSC 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".
BSA Solution		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".
DNA Ligase		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".
Ligation Solution		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".
Wash Solution		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".
Capture Solution		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".
Primer 1		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".
Primer 2		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".
HaloPlex Indexing Primer A01 - H12		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".
Hybridization Solution		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".
Enrichment Control DNA		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".
Enzyme Strip 1		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".

SECTION 6: Accidental release measures

Enzyme Strip 2

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: RE 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).

SSC 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).

BSA Solution

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).

DNA Ligase

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).

Ligation Solution

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).

Wash Solution

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).

Capture Solution

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).

Primer 1

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).

Primer 2

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).

HaloPlex Indexing
Primer A01 - H12

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).

Hybridization Solution

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).

Enrichment Control DNA

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).

Enzyme Strip 1

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).

Enzyme Strip 2

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

6.3 Methods and material for containment and cleaning up

SECTION 6: Accidental release measures

Methods for cleaning up	: RE 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.
	SSC 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.
	BSA Solution	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.
	DNA Ligase	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. May be harmful to the environment if released. Dispose of spillages under controlled conditions.
	Ligation Solution	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. May be harmful to the environment if released. Dispose of spillages under controlled conditions.
	Wash Solution	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.
	Capture Solution	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.
	Primer 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.
	Primer 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.
	HaloPlex Indexing Primer A01 - H12	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.
	Hybridization Solution	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.
	Enrichment Control DNA	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.
	Enzyme Strip 1	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively,

SECTION 6: Accidental release measures

Enzyme Strip 2

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.

6.4 Reference to other sections

- : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage**7.1 Precautions for safe handling****Protective measures**

: RE Buffer

Put on appropriate personal protective equipment (see Section 8).

SSC Buffer

Put on appropriate personal protective equipment (see Section 8).

BSA Solution

Put on appropriate personal protective equipment (see Section 8).

DNA Ligase

Put on appropriate personal protective equipment (see Section 8).

Ligation Solution

Handle material(s) under controlled conditions. Put on appropriate personal protective equipment (see Section 8).

Wash Solution

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Capture Solution

Put on appropriate personal protective equipment (see Section 8).

Primer 1

Put on appropriate personal protective equipment (see Section 8).

Primer 2

Put on appropriate personal protective equipment (see Section 8).

HaloPlex Indexing
Primer A01 - H12

Put on appropriate personal protective equipment (see Section 8).

Hybridization Solution

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Enrichment Control DNA

Put on appropriate personal protective equipment (see Section 8).

Enzyme Strip 1

Put on appropriate personal protective equipment (see Section 8).

Enzyme Strip 2

Put on appropriate personal protective equipment (see Section 8).

SECTION 7: Handling and storage**Advice on general occupational hygiene**

: RE 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.

SSC 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.

BSA Solution

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.

DNA Ligase

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.

Ligation Solution

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.

Wash Solution

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.

Capture Solution

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.

Primer 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.

Primer 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.

HaloPlex Indexing
Primer A01 - H12

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.

Hybridization Solution

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

SECTION 7: Handling and storage

Enrichment Control DNA	equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Enzyme Strip 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.
Enzyme Strip 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.

7.2 Conditions for safe storage, including any incompatibilities**Storage**

: RE 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.

SSC 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.

BSA Solution

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.

DNA Ligase

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.

Ligation Solution

Store in accordance with local regulations. Store in original

SECTION 7: Handling and storage

	container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Wash Solution	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Capture Solution	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.
Primer 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Primer 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
HaloPlex Indexing Primer A01 - H12	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.
Hybridization Solution	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use.

SECTION 7: Handling and storage

	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.
Enrichment Control DNA	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.
Enzyme Strip 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Enzyme Strip 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)**Recommendations**

RE Buffer	Industrial applications, Professional applications.
SSC Buffer	Industrial applications, Professional applications.
BSA Solution	Industrial applications, Professional applications.
DNA Ligase	Industrial applications, Professional applications.
Ligation Solution	Industrial applications, Professional applications.
Wash Solution	Industrial applications, Professional applications.
Capture Solution	Industrial applications, Professional applications.
Primer 1	Industrial applications, Professional applications.
Primer 2	Industrial applications, Professional applications.
HaloPlex Indexing	Industrial applications, Professional applications.
Primer A01 - H12	
Hybridization Solution	Industrial applications, Professional applications.
Enrichment Control DNA	Industrial applications, Professional applications.
Enzyme Strip 1	Industrial applications, Professional applications.
Enzyme Strip 2	Industrial applications, Professional applications.

Industrial sector specific solutions

RE Buffer	Not available.
SSC Buffer	Not available.
BSA Solution	Not available.
DNA Ligase	Not available.
Ligation Solution	Not available.
Wash Solution	Not available.
Capture Solution	Not available.
Primer 1	Not available.
Primer 2	Not available.
HaloPlex Indexing	Not available.

SECTION 7: Handling and storage

Primer A01 - H12	
Hybridization Solution	Not available.
Enrichment Control DNA	Not available.
Enzyme Strip 1	Not available.
Enzyme Strip 2	Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters


Occupational exposure limits

Product/ingredient name	Exposure limit values
BSA Solution Glycerol	EH40/2005 WELs (United Kingdom (UK), 1/2020). TWA: 10 mg/m ³ 8 hours. Form: Mist
DNA Ligase Glycerol	EH40/2005 WELs (United Kingdom (UK), 1/2020). TWA: 10 mg/m ³ 8 hours. Form: Mist
Wash Solution Formamide	EH40/2005 WELs (United Kingdom (UK), 1/2020). STEL: 56 mg/m ³ 15 minutes. STEL: 30 ppm 15 minutes. TWA: 37 mg/m ³ 8 hours. TWA: 20 ppm 8 hours.
Hybridization Solution Formamide	EH40/2005 WELs (United Kingdom (UK), 1/2020). STEL: 56 mg/m ³ 15 minutes. STEL: 30 ppm 15 minutes. TWA: 37 mg/m ³ 8 hours. TWA: 20 ppm 8 hours.
Enzyme Strip 1 Glycerol	EH40/2005 WELs (United Kingdom (UK), 1/2020). TWA: 10 mg/m ³ 8 hours. Form: Mist
Enzyme Strip 2 Glycerol	EH40/2005 WELs (United Kingdom (UK), 1/2020). TWA: 10 mg/m ³ 8 hours. Form: Mist

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures

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

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Wash Solution Formamide	DNEL	Long term Dermal	0.952 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	6.6 mg/m ³	Workers	Systemic
Hybridization Solution Formamide	DNEL	Long term Dermal	0.952 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	6.6 mg/m ³	Workers	Systemic

SECTION 8: Exposure controls/personal protection

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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

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

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

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

SECTION 9: Physical and chemical properties

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

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	<div> <div> E Buffer SSC Buffer BSA Solution DNA Ligase Ligation Solution Wash Solution Capture Solution Primer 1 Primer 2 HaloPlex Indexing Primer A01 - H12 Hybridization Solution Enrichment Control DNA </div> <div> Liquid. Liquid. Liquid. [Clear.] Liquid. Liquid. Liquid. Liquid. Liquid. Liquid. Liquid. Liquid. Liquid. Liquid. </div> </div>
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SECTION 9: Physical and chemical properties

Colour		Enzyme Strip 1	Liquid.
		Enzyme Strip 2	Liquid.
	:	<input checked="" type="checkbox"/> E Buffer	Not available.
		SSC Buffer	Not available.
		BSA Solution	Colourless.
		DNA Ligase	Not available.
		Ligation Solution	Not available.
		Wash Solution	Not available.
		Capture Solution	Not available.
		Primer 1	Not available.
		Primer 2	Not available.
		HaloPlex Indexing	Not available.
		Primer A01 - H12	
		Hybridization Solution	Not available.
		Enrichment Control DNA	Not available.
Odour		Enzyme Strip 1	Not available.
		Enzyme Strip 2	Not available.
	:	<input checked="" type="checkbox"/> E Buffer	Not available.
		SSC Buffer	Not available.
		BSA Solution	Odourless.
		DNA Ligase	Not available.
		Ligation Solution	Not available.
		Wash Solution	Not available.
		Capture Solution	Not available.
		Primer 1	Not available.
		Primer 2	Not available.
		HaloPlex Indexing	Not available.
		Primer A01 - H12	
		Hybridization Solution	Not available.
		Enrichment Control DNA	Not available.
Odour threshold		Enzyme Strip 1	Not available.
		Enzyme Strip 2	Not available.
	:	<input checked="" type="checkbox"/> E Buffer	Not available.
		SSC Buffer	Not available.
		BSA Solution	Not available.
		DNA Ligase	Not available.
		Ligation Solution	Not available.
		Wash Solution	Not available.
		Capture Solution	Not available.
		Primer 1	Not available.
		Primer 2	Not available.
		HaloPlex Indexing	Not available.
		Primer A01 - H12	
		Hybridization Solution	Not available.
		Enrichment Control DNA	Not available.
Melting point/freezing point		Enzyme Strip 1	Not available.
		Enzyme Strip 2	Not available.
	:	<input checked="" type="checkbox"/> E Buffer	0°C
		SSC Buffer	0°C
		BSA Solution	20°C
		DNA Ligase	Not available.
		Ligation Solution	0°C
		Wash Solution	Not available.
		Capture Solution	Not available.
		Primer 1	0°C
		Primer 2	0°C
		HaloPlex Indexing	0°C
		Primer A01 - H12	
		Hybridization Solution	Not available.
		Enrichment Control DNA	0°C
		Enzyme Strip 1	Not available.
		Enzyme Strip 2	Not available.

SECTION 9: Physical and chemical properties

Initial boiling point and boiling range	: RE Buffer	100°C
	SSC Buffer	100°C
	BSA Solution	182°C
	DNA Ligase	Not available.
	Ligation Solution	100°C
	Wash Solution	Not available.
	Capture Solution	Not available.
	Primer 1	100°C
	Primer 2	100°C
	HaloPlex Indexing	100°C
	Primer A01 - H12	
	Hybridization Solution	Not available.
	Enrichment Control DNA	100°C
	Enzyme Strip 1	Not available.
	Enzyme Strip 2	Not available.
Flammability	: RE Buffer	Not applicable.
	SSC Buffer	Not applicable.
	BSA Solution	Not applicable.
	DNA Ligase	Not applicable.
	Ligation Solution	Not applicable.
	Wash Solution	Not applicable.
	Capture Solution	Not applicable.
	Primer 1	Not applicable.
	Primer 2	Not applicable.
	HaloPlex Indexing	Not applicable.
	Primer A01 - H12	
	Hybridization Solution	Not applicable.
	Enrichment Control DNA	Not applicable.
	Enzyme Strip 1	Not applicable.
	Enzyme Strip 2	Not applicable.
Upper/lower flammability or explosive limits	: RE Buffer	Not available.
	SSC Buffer	Not available.
	BSA Solution	Not available.
	DNA Ligase	Not available.
	Ligation Solution	Not available.
	Wash Solution	Not available.
	Capture Solution	Not available.
	Primer 1	Not available.
	Primer 2	Not available.
	HaloPlex Indexing	Not available.
	Primer A01 - H12	
	Hybridization Solution	Not available.
	Enrichment Control DNA	Not available.
	Enzyme Strip 1	Not available.
	Enzyme Strip 2	Not available.
Flash point	: RE Buffer	Not available.
	SSC Buffer	Not available.
	BSA Solution	Closed cup: 160°C
	DNA Ligase	Not available.
	Ligation Solution	Not available.
	Wash Solution	Not available.
	Capture Solution	Not available.
	Primer 1	Not available.
	Primer 2	Not available.
	HaloPlex Indexing	Not available.
	Primer A01 - H12	
	Hybridization Solution	Not available.
	Enrichment Control DNA	Not available.
	Enzyme Strip 1	Not available.
	Enzyme Strip 2	Not available.

SECTION 9: Physical and chemical properties

Ingredient name	Closed cup		Open cup	
	°C	Method	°C	Method
DNA Ligase				
glycerol	-	-	177	-
Wash Solution				
formamide	150	-	152	DIN EN ISO 2592
Hybridization Solution				
formamide	150	-	152	DIN EN ISO 2592
Enzyme Strip 1				
glycerol	-	-	177	-
Enzyme Strip 2				
glycerol	-	-	177	-

Auto-ignition temperature : BSA Solution 370°C
Enzyme Strip 1 370°C
Enzyme Strip 2 370°C

Ingredient name	°C	Method
DNA Ligase		
glycerol	370	-
Wash Solution		
formamide	>500	ASTM D 2155-66
Hybridization Solution		
formamide	>500	ASTM D 2155-66

Decomposition temperature : RE Buffer Not available.
SSC Buffer Not available.
BSA Solution Not available.
DNA Ligase Not available.
Ligation Solution Not available.
Wash Solution Not available.
Capture Solution Not available.
Primer 1 Not available.
Primer 2 Not available.
HaloPlex Indexing Not available.
Primer A01 - H12 Not available.
Hybridization Solution Not available.
Enrichment Control DNA Not available.
Enzyme Strip 1 Not available.
Enzyme Strip 2 Not available.

SECTION 9: Physical and chemical properties

pH	:	RE Buffer	7.9
		SSC Buffer	Not available.
		BSA Solution	Not available.
		DNA Ligase	7.4
		Ligation Solution	Not available.
		Wash Solution	7.5
		Capture Solution	Not available.
		Primer 1	Not available.
		Primer 2	Not available.
		HaloPlex Indexing	Not available.
		Primer A01 - H12	
		Hybridization Solution	7.5
		Enrichment Control DNA	Not available.
		Enzyme Strip 1	7.4
		Enzyme Strip 2	7.4

Viscosity	:	RE Buffer	Not available.
		SSC Buffer	Not available.
		BSA Solution	Not available.
		DNA Ligase	Not available.
		Ligation Solution	Not available.
		Wash Solution	Not available.
		Capture Solution	Not available.
		Primer 1	Not available.
		Primer 2	Not available.
		HaloPlex Indexing	Not available.
		Primer A01 - H12	
		Hybridization Solution	Not available.
		Enrichment Control DNA	Not available.
		Enzyme Strip 1	Not available.
		Enzyme Strip 2	Not available.

Solubility(ies)	:	Media	Result
		RE Buffer	
		water	Soluble
		SSC Buffer	
		water	Soluble
		BSA Solution	
		water	Soluble
		DNA Ligase	
		water	Soluble
		Ligation Solution	
		water	Soluble
		Wash Solution	
		water	Soluble
		Capture Solution	
		water	Soluble
		Primer 1	
		water	Soluble
		Primer 2	
		water	Soluble
		HaloPlex Indexing Primer A01 - H12	
		water	Soluble
		Hybridization Solution	
		water	Soluble
		Enrichment Control DNA	
		water	Soluble
		Enzyme Strip 1	
		water	Soluble
		Enzyme Strip 2	
		water	Soluble

SECTION 9: Physical and chemical properties

Partition coefficient: n-octanol/water	:	RE Buffer	Not applicable.
		SSC Buffer	Not applicable.
		BSA Solution	Not applicable.
		DNA Ligase	Not applicable.
		Ligation Solution	Not applicable.
		Wash Solution	Not applicable.
		Capture Solution	Not applicable.
		Primer 1	Not applicable.
		Primer 2	Not applicable.
		HaloPlex Indexing	Not applicable.
		Primer A01 - H12	
		Hybridization Solution	Not applicable.
		Enrichment Control DNA	Not applicable.
		Enzyme Strip 1	Not applicable.
		Enzyme Strip 2	Not applicable.
Vapour pressure	:	BSA Solution	<0.13 kPa (<1 mm Hg)
		Enzyme Strip 1	<0.13 kPa (<1 mm Hg)
		Enzyme Strip 2	<0.13 kPa (<1 mm Hg)

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
RE Buffer						
water	17.5	2.3	-	92.258	12.3	-
SSC Buffer						
water	17.5	2.3	-	92.258	12.3	-
DNA Ligase						
water	17.5	2.3	-	92.258	12.3	-
glycerol	0.000075	0.00001	-	0.0025	0.00033	-
Ligation Solution						
water	17.5	2.3	-	92.258	12.3	-
Wash Solution						
water	17.5	2.3	-	92.258	12.3	-
formamide	0.045	0.006	-	-	-	-
Capture Solution						
water	17.5	2.3	-	92.258	12.3	-
Primer 1						
water	17.5	2.3	-	92.258	12.3	-
Primer 2						
water	17.5	2.3	-	92.258	12.3	-

SECTION 9: Physical and chemical properties**HaloPlex Indexing
Primer A01 - H12**

water

17.5

2.3

-

92.258

12.3

-

**Hybridization
Solution**

water

17.5

2.3

-

92.258

12.3

-

formamide

0.045

0.006

-

-

-

-

**Enrichment
Control DNA**

water

17.5

2.3

-

92.258

12.3

-

Evaporation rate

RE Buffer	Not available.
SSC Buffer	Not available.
BSA Solution	Not available.
DNA Ligase	Not available.
Ligation Solution	Not available.
Wash Solution	Not available.
Capture Solution	Not available.
Primer 1	Not available.
Primer 2	Not available.
HaloPlex Indexing Primer A01 - H12	Not available.
Hybridization Solution	Not available.
Enrichment Control DNA	Not available.
Enzyme Strip 1	Not available.
Enzyme Strip 2	Not available.

Relative density

RE Buffer	Not available.
SSC Buffer	Not available.
BSA Solution	1.262
DNA Ligase	Not available.
Ligation Solution	Not available.
Wash Solution	Not available.
Capture Solution	Not available.
Primer 1	Not available.
Primer 2	Not available.
HaloPlex Indexing Primer A01 - H12	Not available.
Hybridization Solution	Not available.
Enrichment Control DNA	Not available.
Enzyme Strip 1	Not available.
Enzyme Strip 2	Not available.

Vapour density

RE Buffer	Not available.
SSC Buffer	Not available.
BSA Solution	3.1 [Air = 1]
DNA Ligase	Not available.
Ligation Solution	Not available.
Wash Solution	Not available.
Capture Solution	Not available.
Primer 1	Not available.
Primer 2	Not available.
HaloPlex Indexing Primer A01 - H12	Not available.
Hybridization Solution	Not available.
Enrichment Control DNA	Not available.
Enzyme Strip 1	Not available.

SECTION 9: Physical and chemical properties

	Enzyme Strip 2	Not available.
Explosive properties	: <input checked="" type="checkbox"/> RE Buffer	Not available.
	SSC Buffer	Not available.
	BSA Solution	Not available.
	DNA Ligase	Not available.
	Ligation Solution	Not available.
	Wash Solution	Not available.
	Capture Solution	Not available.
	Primer 1	Not available.
	Primer 2	Not available.
	HaloPlex Indexing	Not available.
	Primer A01 - H12	
	Hybridization Solution	Not available.
	Enrichment Control DNA	Not available.
Oxidising properties	Enzyme Strip 1	Not available.
	Enzyme Strip 2	Not available.
	: <input checked="" type="checkbox"/> RE Buffer	Not available.
	SSC Buffer	Not available.
	BSA Solution	Not available.
	DNA Ligase	Not available.
	Ligation Solution	Not available.
	Wash Solution	Not available.
	Capture Solution	Not available.
	Primer 1	Not available.
	Primer 2	Not available.
	HaloPlex Indexing	Not available.
	Primer A01 - H12	
	Hybridization Solution	Not available.
	Enrichment Control DNA	Not available.
	Enzyme Strip 1	Not available.
	Enzyme Strip 2	Not available.

Particle characteristics

Median particle size	: <input checked="" type="checkbox"/> RE Buffer	Not applicable.
	SSC Buffer	Not applicable.
	BSA Solution	Not applicable.
	DNA Ligase	Not applicable.
	Ligation Solution	Not applicable.
	Wash Solution	Not applicable.
	Capture Solution	Not applicable.
	Primer 1	Not applicable.
	Primer 2	Not applicable.
	HaloPlex Indexing	Not applicable.
	Primer A01 - H12	
	Hybridization Solution	Not applicable.
	Enrichment Control DNA	Not applicable.
	Enzyme Strip 1	Not applicable.
	Enzyme Strip 2	Not applicable.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: <input checked="" type="checkbox"/> RE Buffer	No specific test data related to reactivity available for this product or its ingredients.
	SSC Buffer	No specific test data related to reactivity available for this product or its ingredients.
	BSA Solution	No specific test data related to reactivity available for this product or its ingredients.
	DNA Ligase	No specific test data related to reactivity available for this product or its ingredients.
	Ligation Solution	No specific test data related to reactivity available for this product or its ingredients.

SECTION 10: Stability and reactivity

Wash Solution	product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
Capture Solution	No specific test data related to reactivity available for this product or its ingredients.
Primer 1	No specific test data related to reactivity available for this product or its ingredients.
Primer 2	No specific test data related to reactivity available for this product or its ingredients.
HaloPlex Indexing Primer A01 - H12	No specific test data related to reactivity available for this product or its ingredients.
Hybridization Solution	No specific test data related to reactivity available for this product or its ingredients.
Enrichment Control DNA	No specific test data related to reactivity available for this product or its ingredients.
Enzyme Strip 1	No specific test data related to reactivity available for this product or its ingredients.
Enzyme Strip 2	No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

RE Buffer	The product is stable.
SSC Buffer	The product is stable.
BSA Solution	The product is stable.
DNA Ligase	The product is stable.
Ligation Solution	The product is stable.
Wash Solution	The product is stable.
Capture Solution	The product is stable.
Primer 1	The product is stable.
Primer 2	The product is stable.
HaloPlex Indexing Primer A01 - H12	The product is stable.
Hybridization Solution	The product is stable.
Enrichment Control DNA	The product is stable.
Enzyme Strip 1	The product is stable.
Enzyme Strip 2	The product is stable.

10.3 Possibility of hazardous reactions

RE Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
SSC Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
BSA Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
DNA Ligase	Under normal conditions of storage and use, hazardous reactions will not occur.
Ligation Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
Wash Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
Capture Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
Primer 1	Under normal conditions of storage and use, hazardous reactions will not occur.
Primer 2	Under normal conditions of storage and use, hazardous reactions will not occur.
HaloPlex Indexing Primer A01 - H12	Under normal conditions of storage and use, hazardous reactions will not occur.
Hybridization Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
Enrichment Control DNA	Under normal conditions of storage and use, hazardous reactions will not occur.
Enzyme Strip 1	Under normal conditions of storage and use, hazardous reactions will not occur.
Enzyme Strip 2	Under normal conditions of storage and use, hazardous reactions will not occur.

SECTION 10: Stability and reactivity

reactions will not occur.

10.4 Conditions to avoid

RE Buffer	No specific data.
SSC Buffer	No specific data.
BSA Solution	No specific data.
DNA Ligase	No specific data.
Ligation Solution	No specific data.
Wash Solution	No specific data.
Capture Solution	No specific data.
Primer 1	No specific data.
Primer 2	No specific data.
HaloPlex Indexing	No specific data.
Primer A01 - H12	
Hybridization Solution	No specific data.
Enrichment Control DNA	No specific data.
Enzyme Strip 1	No specific data.
Enzyme Strip 2	No specific data.

10.5 Incompatible materials

RE Buffer	May react or be incompatible with oxidising materials.
SSC Buffer	May react or be incompatible with oxidising materials.
BSA Solution	May react or be incompatible with oxidising materials.
DNA Ligase	May react or be incompatible with oxidising materials.
Ligation Solution	May react or be incompatible with oxidising materials.
Wash Solution	May react or be incompatible with oxidising materials.
Capture Solution	May react or be incompatible with oxidising materials.
Primer 1	May react or be incompatible with oxidising materials.
Primer 2	May react or be incompatible with oxidising materials.
HaloPlex Indexing	May react or be incompatible with oxidising materials.
Primer A01 - H12	
Hybridization Solution	May react or be incompatible with oxidising materials.
Enrichment Control DNA	May react or be incompatible with oxidising materials.
Enzyme Strip 1	May react or be incompatible with oxidising materials.
Enzyme Strip 2	May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products

RE Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
SSC Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
BSA Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
DNA Ligase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Ligation Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Wash Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Capture Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Primer 1	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Primer 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
HaloPlex Indexing	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Primer A01 - H12	
Hybridization Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Enrichment Control DNA	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Enzyme Strip 1	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Enzyme Strip 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
BSA Solution Glycerol	LD50 Oral	Rat	12600 mg/kg	-
DNA Ligase Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	LD50 Oral	Rat	2800 mg/kg	-
Ligation Solution Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	LD50 Oral	Rat	2800 mg/kg	-
Wash Solution Formamide	LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	Rat - Male Rabbit Rat	>21 mg/l 17 g/kg 5570 mg/kg	4 hours - -
Hybridization Solution Formamide	LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	Rat - Male Rabbit Rat	>21 mg/l 17 g/kg 5570 mg/kg	4 hours - -
Enzyme Strip 1 Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Enzyme Strip 2 Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
BSA Solution Glycerol	12600	N/A	N/A	N/A	N/A
DNA Ligase Glycerol	12600	N/A	N/A	N/A	N/A
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	500	N/A	N/A	N/A	N/A
Ligation Solution Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	500	N/A	N/A	N/A	N/A
Wash Solution Formamide	5570	17000	N/A	N/A	N/A
Hybridization Solution Formamide	5570	17000	N/A	N/A	N/A
Enzyme Strip 1 Glycerol	12600	N/A	N/A	N/A	N/A

SECTION 11: Toxicological information

Enzyme Strip 2 Glycerol	12600	N/A	N/A	N/A	N/A
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Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
BSA Solution Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
DNA Ligase Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	Eyes - Severe irritant	Rabbit	-	1 %	-
Ligation Solution Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	Eyes - Severe irritant	Rabbit	-	1 %	-
Enzyme Strip 1 Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Enzyme Strip 2 Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

Sensitiser**Conclusion/Summary** : Not available.**Mutagenicity****Conclusion/Summary** : Not available.**Carcinogenicity****Conclusion/Summary** : Not available.**Reproductive toxicity****Conclusion/Summary** : Not available.**Teratogenicity****Conclusion/Summary** : Not available.**Specific target organ toxicity (single exposure)**

Not available.

Specific target organ toxicity (repeated exposure)

SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
Wash Solution Formamide	Category 2	oral	blood
Hybridization Solution Formamide	Category 2	oral	blood

Aspiration hazard

Not available.

Information on likely routes of exposure

RE Buffer	Not available.
SSC Buffer	Not available.
BSA Solution	Not available.
DNA Ligase	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Ligation Solution	Not available.
Wash Solution	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Capture Solution	Not available.
Primer 1	Not available.
Primer 2	Not available.
HaloPlex Indexing	Not available.
Primer A01 - H12	
Hybridization Solution	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Enrichment Control DNA	Not available.
Enzyme Strip 1	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Enzyme Strip 2	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.



Potential acute health effects**Inhalation**

RE Buffer	No known significant effects or critical hazards.
SSC Buffer	No known significant effects or critical hazards.
BSA Solution	No known significant effects or critical hazards.
DNA Ligase	No known significant effects or critical hazards.
Ligation Solution	No known significant effects or critical hazards.
Wash Solution	No known significant effects or critical hazards.
Capture Solution	No known significant effects or critical hazards.
Primer 1	No known significant effects or critical hazards.
Primer 2	No known significant effects or critical hazards.
HaloPlex Indexing	No known significant effects or critical hazards.
Primer A01 - H12	
Hybridization Solution	No known significant effects or critical hazards.
Enrichment Control DNA	No known significant effects or critical hazards.
Enzyme Strip 1	No known significant effects or critical hazards.
Enzyme Strip 2	No known significant effects or critical hazards.



Ingestion

RE Buffer	No known significant effects or critical hazards.
SSC Buffer	No known significant effects or critical hazards.
BSA Solution	No known significant effects or critical hazards.
DNA Ligase	No known significant effects or critical hazards.
Ligation Solution	No known significant effects or critical hazards.
Wash Solution	No known significant effects or critical hazards.
Capture Solution	No known significant effects or critical hazards.
Primer 1	No known significant effects or critical hazards.
Primer 2	No known significant effects or critical hazards.
HaloPlex Indexing	No known significant effects or critical hazards.
Primer A01 - H12	
Hybridization Solution	No known significant effects or critical hazards.
Enrichment Control DNA	No known significant effects or critical hazards.
Enzyme Strip 1	No known significant effects or critical hazards.
Enzyme Strip 2	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Skin contact	 RE Buffer	No known significant effects or critical hazards.
	SSC Buffer	No known significant effects or critical hazards.
	BSA Solution	No known significant effects or critical hazards.
	DNA Ligase	No known significant effects or critical hazards.
	Ligation Solution	No known significant effects or critical hazards.
	Wash Solution	No known significant effects or critical hazards.
	Capture Solution	No known significant effects or critical hazards.
	Primer 1	No known significant effects or critical hazards.
	Primer 2	No known significant effects or critical hazards.
	HaloPlex Indexing	No known significant effects or critical hazards.
	Primer A01 - H12	No known significant effects or critical hazards.
	Hybridization Solution	No known significant effects or critical hazards.
	Enrichment Control DNA	No known significant effects or critical hazards.
	Enzyme Strip 1	No known significant effects or critical hazards.
	Enzyme Strip 2	No known significant effects or critical hazards.
Eye contact	 RE Buffer	No known significant effects or critical hazards.
	SSC Buffer	No known significant effects or critical hazards.
	BSA Solution	No known significant effects or critical hazards.
	DNA Ligase	No known significant effects or critical hazards.
	Ligation Solution	No known significant effects or critical hazards.
	Wash Solution	No known significant effects or critical hazards.
	Capture Solution	No known significant effects or critical hazards.
	Primer 1	No known significant effects or critical hazards.
	Primer 2	No known significant effects or critical hazards.
	HaloPlex Indexing	No known significant effects or critical hazards.
	Primer A01 - H12	No known significant effects or critical hazards.
	Hybridization Solution	No known significant effects or critical hazards.
	Enrichment Control DNA	No known significant effects or critical hazards.
	Enzyme Strip 1	No known significant effects or critical hazards.
	Enzyme Strip 2	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	 RE Buffer	No specific data.
	SSC Buffer	No specific data.
	BSA Solution	No specific data.
	DNA Ligase	No specific data.
	Ligation Solution	No specific data.
	Wash Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Capture Solution	No specific data.
	Primer 1	No specific data.
	Primer 2	No specific data.
	HaloPlex Indexing	No specific data.
	Primer A01 - H12	No specific data.
	Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Enrichment Control DNA	No specific data.
	Enzyme Strip 1	No specific data.
	Enzyme Strip 2	No specific data.
Ingestion	 RE Buffer	No specific data.
	SSC Buffer	No specific data.
	BSA Solution	No specific data.
	DNA Ligase	No specific data.
	Ligation Solution	No specific data.
	Wash Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Capture Solution	No specific data.

SECTION 11: Toxicological information

	Primer 1	No specific data.
	Primer 2	No specific data.
	HaloPlex Indexing	No specific data.
	Primer A01 - H12	
	Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Enrichment Control DNA	No specific data.
	Enzyme Strip 1	No specific data.
	Enzyme Strip 2	No specific data.
Skin contact	: RE Buffer	No specific data.
	SSC Buffer	No specific data.
	BSA Solution	No specific data.
	DNA Ligase	No specific data.
	Ligation Solution	No specific data.
	Wash Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Capture Solution	No specific data.
	Primer 1	No specific data.
	Primer 2	No specific data.
	HaloPlex Indexing	No specific data.
	Primer A01 - H12	
	Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Enrichment Control DNA	No specific data.
	Enzyme Strip 1	No specific data.
	Enzyme Strip 2	No specific data.
Eye contact	: RE Buffer	No specific data.
	SSC Buffer	No specific data.
	BSA Solution	No specific data.
	DNA Ligase	No specific data.
	Ligation Solution	No specific data.
	Wash Solution	No specific data.
	Capture Solution	No specific data.
	Primer 1	No specific data.
	Primer 2	No specific data.
	HaloPlex Indexing	No specific data.
	Primer A01 - H12	
	Hybridization Solution	No specific data.
	Enrichment Control DNA	No specific data.
	Enzyme Strip 1	No specific data.
	Enzyme Strip 2	No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Short term exposure**

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary : Not available.

SECTION 11: Toxicological information

General	:	RE Buffer	No known significant effects or critical hazards.
		SSC Buffer	No known significant effects or critical hazards.
		BSA Solution	No known significant effects or critical hazards.
		DNA Ligase	No known significant effects or critical hazards.
		Ligation Solution	No known significant effects or critical hazards.
		Wash Solution	May cause damage to organs through prolonged or repeated exposure.
		Capture Solution	No known significant effects or critical hazards.
		Primer 1	No known significant effects or critical hazards.
		Primer 2	No known significant effects or critical hazards.
		HaloPlex Indexing Primer A01 - H12	No known significant effects or critical hazards.
		Hybridization Solution	May cause damage to organs through prolonged or repeated exposure.
		Enrichment Control DNA	No known significant effects or critical hazards.
		Enzyme Strip 1	No known significant effects or critical hazards.
		Enzyme Strip 2	No known significant effects or critical hazards.
Carcinogenicity	:	RE Buffer	No known significant effects or critical hazards.
		SSC Buffer	No known significant effects or critical hazards.
		BSA Solution	No known significant effects or critical hazards.
		DNA Ligase	No known significant effects or critical hazards.
		Ligation Solution	No known significant effects or critical hazards.
		Wash Solution	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
		Capture Solution	No known significant effects or critical hazards.
		Primer 1	No known significant effects or critical hazards.
		Primer 2	No known significant effects or critical hazards.
		HaloPlex Indexing Primer A01 - H12	No known significant effects or critical hazards.
		Hybridization Solution	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
		Enrichment Control DNA	No known significant effects or critical hazards.
		Enzyme Strip 1	No known significant effects or critical hazards.
		Enzyme Strip 2	No known significant effects or critical hazards.
Mutagenicity	:	RE Buffer	No known significant effects or critical hazards.
		SSC Buffer	No known significant effects or critical hazards.
		BSA Solution	No known significant effects or critical hazards.
		DNA Ligase	No known significant effects or critical hazards.
		Ligation Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
		Capture Solution	No known significant effects or critical hazards.
		Primer 1	No known significant effects or critical hazards.
		Primer 2	No known significant effects or critical hazards.
		HaloPlex Indexing Primer A01 - H12	No known significant effects or critical hazards.
		Hybridization Solution	No known significant effects or critical hazards.
		Enrichment Control DNA	No known significant effects or critical hazards.
		Enzyme Strip 1	No known significant effects or critical hazards.
		Enzyme Strip 2	No known significant effects or critical hazards.
Reproductive toxicity	:	RE Buffer	No known significant effects or critical hazards.
		SSC Buffer	No known significant effects or critical hazards.
		BSA Solution	No known significant effects or critical hazards.
		DNA Ligase	No known significant effects or critical hazards.
		Ligation Solution	No known significant effects or critical hazards.
		Wash Solution	May damage fertility or the unborn child.
		Capture Solution	No known significant effects or critical hazards.
		Primer 1	No known significant effects or critical hazards.
		Primer 2	No known significant effects or critical hazards.
		HaloPlex Indexing Primer A01 - H12	No known significant effects or critical hazards.
		Hybridization Solution	May damage fertility or the unborn child.
		Enrichment Control DNA	No known significant effects or critical hazards.
		Enzyme Strip 1	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Enzyme Strip 2

No known significant effects or critical hazards.

SECTION 12: Ecological information**12.1 Toxicity**

Product/ingredient name	Result	Species	Exposure
BSA Solution Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Trout - <i>Oncorhynchus mykiss</i>	96 hours
DNA Ligase Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Trout - <i>Oncorhynchus mykiss</i>	96 hours
Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	Acute EC50 210 µg/l Fresh water	Algae - Green algae - <i>Selenastrum sp.</i>	96 hours
	Acute LC50 10800 µg/l Marine water	Crustaceans - Aesop shrimp - <i>Pandalus montagui</i> - Adult	48 hours
	Acute LC50 2.518 mg/l Fresh water	Daphnia - Water flea - <i>Daphnia magna</i>	48 hours
	Acute LC50 7200 µg/l Fresh water	Fish - Rainbow trout,donaldson trout - <i>Oncorhynchus mykiss</i>	96 hours
Ligation Solution Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	Acute EC50 210 µg/l Fresh water	Algae - Green algae - <i>Selenastrum sp.</i>	96 hours
	Acute LC50 10800 µg/l Marine water	Crustaceans - Aesop shrimp - <i>Pandalus montagui</i> - Adult	48 hours
	Acute LC50 2.518 mg/l Fresh water	Daphnia - Water flea - <i>Daphnia magna</i>	48 hours
	Acute LC50 7200 µg/l Fresh water	Fish - Rainbow trout,donaldson trout - <i>Oncorhynchus mykiss</i>	96 hours
Wash Solution Formamide	Acute EC50 >500 mg/l Fresh water	Algae	72 hours
	Acute EC50 >500 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 6569 mg/l Fresh water	Fish	96 hours
	Acute NOEC 4640 mg/l Fresh water	Algae	72 hours
	Acute NOEC 4640 mg/l Fresh water	Fish	96 hours
Hybridization Solution Formamide	Acute EC50 >500 mg/l Fresh water	Algae	72 hours
	Acute EC50 >500 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 6569 mg/l Fresh water	Fish	96 hours
	Acute NOEC 4640 mg/l Fresh water	Algae	72 hours
	Acute NOEC 4640 mg/l Fresh water	Fish	96 hours
Enzyme Strip 1 Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Trout - <i>Oncorhynchus mykiss</i>	96 hours
Enzyme Strip 2 Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Trout - <i>Oncorhynchus mykiss</i>	96 hours

Conclusion/Summary : Not available.**12.2 Persistence and degradability**

SECTION 12: Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
BSA Solution Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
DNA Ligase Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
Wash Solution Formamide	OECD 301A Ready Biodegradability - DOC Die-Away Test	99 % - Readily - 28 days	-	-
Hybridization Solution Formamide	OECD 301A Ready Biodegradability - DOC Die-Away Test	99 % - Readily - 28 days	-	-
Enzyme Strip 1 Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
Enzyme Strip 2 Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Wash Solution Formamide	-	-	Readily
Hybridization Solution Formamide	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
BSA Solution Glycerol	-1.76	-	Low
DNA Ligase Glycerol	-1.76	-	Low
Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	2.7	78.67	Low
Ligation Solution			

SECTION 12: Ecological information

Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	2.7	78.67	Low
Wash Solution Formamide	-0.82	-	Low
Hybridization Solution Formamide	-0.82	-	Low
Enzyme Strip 1 Glycerol	-1.76	-	Low
Enzyme Strip 2 Glycerol	-1.76	-	Low

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

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

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

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

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

Packaging

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

Special precautions : ☒ Dispose of material(s) and residues under controlled conditions. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-

SECTION 14: Transport information

14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No.	No.	No.

Additional information

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

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

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
UK (GB)/REACH

Annex XIV - List of substances subject to authorisation**Annex XIV**

None of the components are listed.

Substances of very high concern

Intrinsic property	Ingredient name	Status	Reference number	Date of revision
DNA Ligase Substance of equivalent concern for environment	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated covering well-defined substances and UVCB substances, polymers and homologues	Candidate	-	12/19/2012
Ligation Solution Substance of equivalent concern for environment	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated covering well-defined substances and UVCB substances, polymers and homologues	Candidate	-	12/19/2012
Wash Solution Toxic to reproduction	formamide	Candidate	-	6/18/2012
Hybridization Solution Toxic to reproduction	formamide	Candidate	-	6/18/2012

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

SECTION 15: Regulatory information

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

Product / Ingredient name	Identifiers	Status
Wash Solution Wash Solution		3 30
Formamide		30
Hybridization Solution Hybridization Solution		3 30
Formamide		30

Label	:	RE Buffer	Not applicable.
		SSC Buffer	Not applicable.
		BSA Solution	Not applicable.
		DNA Ligase	Not applicable.
		Ligation Solution	Not applicable.
		Wash Solution	Restricted to professional users.
		Capture Solution	Not applicable.
		Primer 1	Not applicable.
		Primer 2	Not applicable.
		HaloPlex Indexing Primer A01 - H12	Not applicable.
		Hybridization Solution	Restricted to professional users.
		Enrichment Control DNA	Not applicable.
		Enzyme Strip 1	Not applicable.
		Enzyme Strip 2	Not applicable.

Seveso Directive

This product is not controlled under the Seveso Directive.

EU regulations

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

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

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

International regulations**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

United States : All components are active or exempted.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms

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

Procedure used to derive the classification

Classification	Justification
Wash Solution Carc. 2, H351 Repr. 1B, H360 STOT RE 2, H373	Calculation method Calculation method Calculation method
Hybridization Solution Carc. 2, H351 Repr. 1B, H360 STOT RE 2, H373	Calculation method Calculation method Calculation method

Full text of abbreviated H statements

DNA Ligase H302 Harmful if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.	
Ligation Solution H302 Harmful if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.	
Wash Solution H351 Suspected of causing cancer. H360 May damage fertility or the unborn child. H373 May cause damage to organs through prolonged or repeated exposure.	
Hybridization Solution H351 Suspected of causing cancer. H360 May damage fertility or the unborn child. H373 May cause damage to organs through prolonged or repeated exposure.	

Full text of classifications

DNA Ligase Acute Tox. 4 ACUTE TOXICITY - Category 4 Aquatic Acute 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 Aquatic Chronic 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 Eye Dam. 1 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 Skin Irrit. 2 SKIN CORROSION/IRRITATION - Category 2	
Ligation Solution Acute Tox. 4 ACUTE TOXICITY - Category 4	

SECTION 16: Other information

Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Wash Solution	
Carc. 2	CARCINOGENICITY - Category 2
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
Hybridization Solution	
Carc. 2	CARCINOGENICITY - Category 2
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

Date of issue/ Date of revision : 01/02/2024

Date of previous issue : 17/02/2021

Version : 4

Notice to reader

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