

SAFETY DATA SHEET



HaloPlex IONPrepack-16 reactions, Part Number 5190-7325

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

1.1 Product identifier

Product name	: HaloPlex IONPrepack-16 reactions, Part Number 5190-7325		
Part No. (Kit)	: 5190-7325		
Part No.	:	RE Buffer	5190-4980
		SSC Buffer	5190-5342
		BSA Solution	5190-5347
		DNA Ligase	5190-4979
		Ligation Solution	5190-4976
		Wash Solution	5190-4977
		Capture Solution	5190-4978
		HaloPlex ION Primer 1	5190-5480
		HaloPlex ION Primer 2	5190-5483
		HaloPlex ION Barcode	various*
		Primer Cassette 1-16	
		Hybridization Solution	5190-5345
		Enrichment Control DNA	5190-5339
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	5190-5343
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	5190-5344

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

Identified uses	
Analytical reagent.	
RE Buffer	0.8 ml
SSC Buffer	2.2 ml (1.1 ml x 2 vials)
BSA Solution	0.03 ml
DNA Ligase	0.05 ml
Ligation Solution	0.96 ml
Wash Solution	2.2 ml (1.1 ml x 2 vials)
Capture Solution	0.8 ml
HaloPlex ION Primer 1	0.024 ml
HaloPlex ION Primer 2	0.024 ml
HaloPlex ION Barcode Primer	0.015 ml x 16 Tubes
Cassette 1-16	
Hybridization Solution	1.1 ml
Enrichment Control DNA	0.12 ml
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	0.016 ml x 8 well
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	0.016 ml x 8 well

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

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

Date of issue/Date of revision : 02/04/2014

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

Nota * : * HaloPlex Indexing Primer Cassette 1-16:5190-5366_5190-5367_5190-5368_5190-5369_5190-5370_5190-5371_5190-5372_5190-5373_5190-5374_5190-5375_5190-5376_5190-5377_5190-5378_5190-5379_5190-5380_5190-5381

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

Product definition	:	RE Buffer	Mixture
		SSC Buffer	Mixture
		BSA Solution	Mixture
		DNA Ligase	Mixture
		Ligation Solution	Mixture
		Wash Solution	Mixture
		Capture Solution	Mixture
		HaloPlex ION Primer 1	Mixture
		HaloPlex ION Primer 2	Mixture
		HaloPlex ION Barcode	Mixture
		Primer Cassette 1-16	
		Hybridization Solution	Mixture
		Enrichment Control DNA	Mixture
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Mixture
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Mixture

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

H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Wash Solution

H360D TOXIC TO REPRODUCTION (Unborn child) - Category 1B

Hybridization Solution

H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
H360D TOXIC TO REPRODUCTION (Unborn child) - Category 1B

**Enzyme Strip 1 - well A, B, C,
D, E, F, G, H**

H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

**Enzyme Strip 2 - well A, B, C,
D, E, F, G, H**

H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

**Ingredients of unknown
toxicity**

:	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.
	HaloPlex ION Primer 1	Not applicable.
	HaloPlex ION Primer 2	Not applicable.
	HaloPlex ION Barcode	Not applicable.
	Primer Cassette 1-16	
	Hybridization Solution	Not applicable.
	Enrichment Control DNA	Not applicable.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not applicable.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not applicable.

SECTION 2: Hazards identification

Ingredients of unknown ecotoxicity	: RE Buffer	Not applicable.
	SSC Buffer	Not applicable.
	BSA Solution	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 5%
	DNA Ligase	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 50%
	Ligation Solution	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 5%
	Wash Solution	Not applicable.
	Capture Solution	Not applicable.
	HaloPlex ION Primer 1	Not applicable.
	HaloPlex ION Primer 2	Not applicable.
	HaloPlex ION Barcode Primer Cassette 1-16	Not applicable.
	Hybridization Solution	Not applicable.
	Enrichment Control DNA	Not applicable.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 50%
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 50%

Classification according to Directive 1999/45/EC [DPD]

RE Buffer	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
SSC Buffer	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
BSA Solution	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
DNA Ligase	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Ligation Solution	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Wash Solution	The product is classified as dangerous according to Directive 1999/45/EC and its amendments.
Capture Solution	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
HaloPlex ION Primer 1	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
HaloPlex ION Primer 2	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
HaloPlex ION Barcode Primer Cassette 1-16	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Hybridization Solution	The product is classified as dangerous according to Directive 1999/45/EC and its amendments.
Enrichment Control DNA	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification	: RE Buffer	Not classified.
	SSC Buffer	Not classified.
	BSA Solution	Not classified.
	DNA Ligase	Not classified.
	Ligation Solution	Not classified.
	Wash Solution	Repr. Cat. 2; R61
	Capture Solution	Not classified.
	HaloPlex ION Primer 1	Not classified.
	HaloPlex ION Primer 2	Not classified.
	HaloPlex ION Barcode Primer Cassette 1-16	Not classified.
	Hybridization Solution	Repr. Cat. 2; R61
	Enrichment Control DNA	Not classified.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not classified.
	Enzyme Strip 2 - well A,	Not classified.

SECTION 2: Hazards identification

	B, C, D, E, F, G, H	
Human health hazards	: RE Buffer	Not applicable.
	SSC Buffer	Not applicable.
	BSA Solution	Not applicable.
	DNA Ligase	Not applicable.
	Ligation Solution	Not applicable.
	Wash Solution	May cause harm to the unborn child.
	Capture Solution	Not applicable.
	HaloPlex ION Primer 1	Not applicable.
	HaloPlex ION Primer 2	Not applicable.
	HaloPlex ION Barcode Primer Cassette 1-16	Not applicable.
	Hybridization Solution	May cause harm to the unborn child.
	Enrichment Control DNA	Not applicable.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not applicable.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not applicable.

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

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

2.2 Label elements

Hazard pictograms



Signal word

	: RE Buffer	No signal word.
	SSC Buffer	No signal word.
	BSA Solution	No signal word.
	DNA Ligase	Warning
	Ligation Solution	No signal word.
	Wash Solution	Danger
	Capture Solution	No signal word.
	HaloPlex ION Primer 1	No signal word.
	HaloPlex ION Primer 2	No signal word.
	HaloPlex ION Barcode Primer Cassette 1-16	No signal word.
	Hybridization Solution	Danger
	Enrichment Control DNA	No signal word.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Warning
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Warning

Hazard statements

	: 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	GHS08 - May cause damage to organs through prolonged or repeated exposure.
	Ligation Solution	No known significant effects or critical hazards.
	Wash Solution	GHS08 - May damage the unborn child.
	Capture Solution	No known significant effects or critical hazards.
	HaloPlex ION Primer 1	No known significant effects or critical hazards.
	HaloPlex ION Primer 2	No known significant effects or critical hazards.
	HaloPlex ION Barcode Primer Cassette 1-16	No known significant effects or critical hazards.
	Hybridization Solution	GHS07 - Causes serious eye irritation. GHS08 - May damage the unborn child.
	Enrichment Control DNA	No known significant effects or critical hazards.

SECTION 2: Hazards identification

Enzyme Strip 1 - well A,
B, C, D, E, F, G, H

GHS08 -
May cause damage to organs through prolonged or repeated exposure.

Enzyme Strip 2 - well A,
B, C, D, E, F, G, H

GHS08 -
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

: RE Buffer Not applicable.
SSC Buffer Not applicable.
BSA Solution Not applicable.
DNA Ligase P260 - Do not breathe vapour.
Ligation Solution Not applicable.
Wash Solution P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P281 - Use personal protective equipment as required.

Capture Solution Not applicable.
HaloPlex ION Primer 1 Not applicable.
HaloPlex ION Primer 2 Not applicable.
HaloPlex ION Barcode Primer Cassette 1-16 Not applicable.
Hybridization Solution P201 - Obtain special instructions before use.
P281 - Use personal protective equipment as required.
P280 - Wear eye or face protection.

Enrichment Control DNA
Enzyme Strip 1 - well A,
B, C, D, E, F, G, H
Enzyme Strip 2 - well A,
B, C, D, E, F, G, H

Not applicable.
P260 - Do not breathe vapour.
P260 - Do not breathe vapour.

Response

: RE Buffer Not applicable.
SSC Buffer Not applicable.
BSA Solution Not applicable.
DNA Ligase P314 - Get medical attention if you feel unwell.
Ligation Solution Not applicable.
Wash Solution P308 + P313 - IF exposed or concerned: Get medical attention.

Capture Solution Not applicable.
HaloPlex ION Primer 1 Not applicable.
HaloPlex ION Primer 2 Not applicable.
HaloPlex ION Barcode Primer Cassette 1-16 Not applicable.
Hybridization Solution P308 + P313 - IF exposed or concerned: Get medical attention.
P305 + P351 - IF IN EYES: Rinse cautiously with water for several minutes.

Enrichment Control DNA Not applicable.
Enzyme Strip 1 - well A,
B, C, D, E, F, G, H P314 - Get medical attention if you feel unwell.
Enzyme Strip 2 - well A,
B, C, D, E, F, G, H P314 - Get medical attention if you feel unwell.

Storage

: RE Buffer Not applicable.
SSC Buffer Not applicable.
BSA Solution Not applicable.
DNA Ligase Not applicable.
Ligation Solution Not applicable.
Wash Solution P405 - Store locked up.
Capture Solution Not applicable.
HaloPlex ION Primer 1 Not applicable.
HaloPlex ION Primer 2 Not applicable.
HaloPlex ION Barcode Primer Cassette 1-16 Not applicable.
Hybridization Solution P405 - Store locked up.
Enrichment Control DNA Not applicable.
Enzyme Strip 1 - well A, Not applicable.

SECTION 2: Hazards identification

	B, C, D, E, F, G, H Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not applicable.
Disposal	: RE Buffer SSC Buffer BSA Solution DNA Ligase Ligation Solution Wash Solution Capture Solution HaloPlex ION Primer 1 HaloPlex ION Primer 2 HaloPlex ION Barcode Primer Cassette 1-16 Hybridization Solution Enrichment Control DNA Enzyme Strip 1 - well A, B, C, D, E, F, G, H Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not applicable. Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable. Not applicable. Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	: DNA Ligase Glycerol Wash Solution Formamide Hybridization Solution Formamide Sodium chloride Enzyme Strip 1 - well A, B, C, D, E, F, G, H Glycerol Enzyme Strip 2 - well A, B, C, D, E, F, G, H Glycerol	
Supplemental label elements	: RE Buffer SSC Buffer BSA Solution DNA Ligase Ligation Solution Wash Solution Capture Solution HaloPlex ION Primer 1 HaloPlex ION Primer 2 HaloPlex ION Barcode Primer Cassette 1-16 Hybridization Solution Enrichment Control DNA Enzyme Strip 1 - well A, B, C, D, E, F, G, H Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Special packaging requirements		
Tactile warning of danger	: RE Buffer SSC Buffer BSA Solution DNA Ligase Ligation Solution Wash Solution Capture Solution HaloPlex ION Primer 1	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

SECTION 2: Hazards identification

HaloPlex ION Primer 2	Not applicable.
HaloPlex ION Barcode	Not applicable.
Primer Cassette 1-16	
Hybridization Solution	Not applicable.
Enrichment Control DNA	Not applicable.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not applicable.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not applicable.

2.3 Other hazards

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.
HaloPlex ION Primer 1	None known.
HaloPlex ION Primer 2	None known.
HaloPlex ION Barcode	None known.
Primer Cassette 1-16	
Hybridization Solution	None known.
Enrichment Control DNA	None known.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	None known.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	None known.

SECTION 3: Composition/information on ingredients

Substance/mixture	: RE Buffer	Mixture
	SSC Buffer	Mixture
	BSA Solution	Mixture
	DNA Ligase	Mixture
	Ligation Solution	Mixture
	Wash Solution	Mixture
	Capture Solution	Mixture
	HaloPlex ION Primer 1	Mixture
	HaloPlex ION Primer 2	Mixture
	HaloPlex ION Barcode	Mixture
	Primer Cassette 1-16	
	Hybridization Solution	Mixture
	Enrichment Control DNA	Mixture
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Mixture
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
BSA Solution Glycerol	EC: 200-289-5 CAS: 56-81-5	>=5 - <10	Not classified.	STOT RE 2, H373 (kidneys) (inhalation)	[1]
DNA Ligase Glycerol	EC: 200-289-5 CAS: 56-81-5	>=50 - <75	Not classified.	STOT RE 2, H373 (kidneys) (inhalation)	[1]
Ligation Solution Glycerol	EC: 200-289-5 CAS: 56-81-5	>=5 - <10	Not classified.	STOT RE 2, H373 (kidneys) (inhalation)	[1]

SECTION 3: Composition/information on ingredients

Wash Solution Formamide	EC: 200-842-0 CAS: 75-12-7 Index: 616-052-00-8	>=20 - <25	Repr. Cat. 2; R61	Repr. 1B, H360D (Unborn child)	[1]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	>=5 - <10	Xi; R36	Eye Irrit. 2, H319	[1]
Capture Solution Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	>=5 - <10	Xi; R36	Eye Irrit. 2, H319	[1]
Hybridization Solution Formamide	EC: 200-842-0 CAS: 75-12-7 Index: 616-052-00-8	>=25 - <35	Repr. Cat. 2; R61	Repr. 1B, H360D (Unborn child)	[1]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	>=10 - <20	Xi; R36	Eye Irrit. 2, H319	[1]
Enzyme Strip 1 - well A, B, C, D, E, F, G, H Glycerol	EC: 200-289-5 CAS: 56-81-5	>=50 - <75	Not classified.	STOT RE 2, H373 (kidneys) (inhalation)	[1]
Enzyme Strip 2 - well A, B, C, D, E, F, G, H Glycerol	EC: 200-289-5 CAS: 56-81-5	>=50 - <75	Not classified. See Section 16 for the full text of the R- phrases declared above.	STOT RE 2, H373 (kidneys) (inhalation) 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 and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

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. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell.
	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

SECTION 4: First aid measures

		any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
	Capture 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.
	HaloPlex ION Primer 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.
	HaloPlex ION 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 ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	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 following exposure or if feeling unwell.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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 following exposure or if feeling unwell.
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. 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 following exposure or if feeling unwell. 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.
	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

SECTION 4: First aid measures

HaloPlex ION Primer 1	symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
HaloPlex ION Primer 2	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
HaloPlex ION Barcode Primer Cassette 1-16	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 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 - well A, B, C, D, E, F, G, H	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 following exposure or if feeling unwell. 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.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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 following exposure or if feeling unwell. 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.
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. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
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

SECTION 4: First aid measures

		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.
	HaloPlex ION Primer 1	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	HaloPlex ION Primer 2	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	HaloPlex ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: RE Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	SSC Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	BSA Solution	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	DNA Ligase	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. 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.

SECTION 4: First aid measures

Ligation Solution	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Wash Solution	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. 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. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
HaloPlex ION Primer 1	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
HaloPlex ION Primer 2	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
HaloPlex ION Barcode Primer Cassette 1-16	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Hybridization Solution	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. 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. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed

SECTION 4: First aid measures

	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 following exposure or if feeling unwell. 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. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. 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.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No action shall be taken involving any personal risk or without suitable training.
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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
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.
HaloPlex ION Primer 1	No action shall be taken involving any personal risk or without suitable training.
HaloPlex ION Primer 2	No action shall be taken involving any personal risk or without suitable training.
HaloPlex ION Barcode Primer Cassette 1-16	No action shall be taken involving any personal risk or without suitable training.
Hybridization 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.
Enrichment Control DNA	No action shall be taken involving any personal risk or without suitable training.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

SECTION 4: First aid measures**4.2 Most important symptoms and effects, both acute and delayed****Potential acute health effects**

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.
		HaloPlex ION Primer 1	No known significant effects or critical hazards.
		HaloPlex ION Primer 2	No known significant effects or critical hazards.
		HaloPlex ION Barcode Primer Cassette 1-16	No known significant effects or critical hazards.
		Hybridization Solution	Causes serious eye irritation.
		Enrichment Control DNA	No known significant effects or critical hazards.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
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	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
		Capture Solution	No known significant effects or critical hazards.
		HaloPlex ION Primer 1	No known significant effects or critical hazards.
		HaloPlex ION Primer 2	No known significant effects or critical hazards.
		HaloPlex ION Barcode Primer Cassette 1-16	No known significant effects or critical hazards.
		Hybridization Solution	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
		Enrichment Control DNA	No known significant effects or critical hazards.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
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.
		HaloPlex ION Primer 1	No known significant effects or critical hazards.
		HaloPlex ION Primer 2	No known significant effects or critical hazards.
		HaloPlex ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
		HaloPlex ION Primer 1	No known significant effects or critical hazards.
		HaloPlex ION Primer 2	No known significant effects or critical hazards.

SECTION 4: First aid measures

HaloPlex ION Barcode	No known significant effects or critical hazards.
Primer Cassette 1-16	
Hybridization Solution	Irritating to mouth, throat and stomach.
Enrichment Control DNA	No known significant effects or critical hazards.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.

Over-exposure signs/symptoms**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.
HaloPlex ION Primer 1	No specific data.
HaloPlex ION Primer 2	No specific data.
HaloPlex ION Barcode	No specific data.
Primer Cassette 1-16	
Hybridization Solution	Adverse symptoms may include the following: pain or irritation watering redness
Enrichment Control DNA	No specific data.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No specific data.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
HaloPlex ION Primer 1	No specific data.
HaloPlex ION Primer 2	No specific data.
HaloPlex ION Barcode	No specific data.
Primer Cassette 1-16	
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 - well A, B, C, D, E, F, G, H	No specific data.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
HaloPlex ION Primer 1	No specific data.
HaloPlex ION Primer 2	No specific data.
HaloPlex ION Barcode	No specific data.

SECTION 4: First aid measures

Ingestion	Primer Cassette 1-16 Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Enrichment Control DNA Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No specific data.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No specific data.
	: 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.
HaloPlex ION Primer 1	No specific data.	
HaloPlex ION Primer 2	No specific data.	
HaloPlex ION Barcode Primer Cassette 1-16 Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations	
Enrichment Control DNA Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No specific data.	
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
	HaloPlex ION Primer 1	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	HaloPlex ION Primer 2	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	HaloPlex ION Barcode Primer Cassette 1-16 Hybridization Solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Enrichment Control DNA	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 4: First aid measures

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.
		HaloPlex ION Primer 1	No specific treatment.
		HaloPlex ION Primer 2	No specific treatment.
		HaloPlex ION Barcode Primer Cassette 1-16	No specific treatment.
		Hybridization Solution	No specific treatment.
		Enrichment Control DNA	No specific treatment.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No specific treatment.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
		HaloPlex ION Primer 1	Use an extinguishing agent suitable for the surrounding fire.
		HaloPlex ION Primer 2	Use an extinguishing agent suitable for the surrounding fire.
		HaloPlex ION Barcode Primer Cassette 1-16	Use an extinguishing agent suitable for the surrounding fire.
		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 - well A, B, C, D, E, F, G, H	Use an extinguishing agent suitable for the surrounding fire.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
		HaloPlex ION Primer 1	None known.
		HaloPlex ION Primer 2	None known.
		HaloPlex ION Barcode Primer Cassette 1-16	None known.
		Hybridization Solution	None known.
		Enrichment Control DNA	None known.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	None known.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	None known.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

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.
	HaloPlex ION Primer 1	In a fire or if heated, a pressure increase will occur and the container may burst.
	HaloPlex ION Primer 2	In a fire or if heated, a pressure increase will occur and the container may burst.
	HaloPlex ION Barcode Primer Cassette 1-16	In a fire or if heated, a pressure increase will occur and the container may burst.
	Hybridization Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
	Enrichment Control DNA	In a fire or if heated, a pressure increase will occur and the container may burst.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	In a fire or if heated, a pressure increase will occur and the container may burst.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: 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	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	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
	HaloPlex ION Primer 1	No specific data.
	HaloPlex ION Primer 2	No specific data.
	HaloPlex ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Decomposition products may include the following materials: carbon dioxide carbon monoxide

SECTION 5: Firefighting measures**5.3 Advice for firefighters**

Special precautions 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 taken involving any personal risk or without suitable training.
	HaloPlex ION Primer 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.
	HaloPlex ION 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 ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	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 - well A, B, C, D, E, F, G, H	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	: 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	DNA Ligase	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full

SECTION 5: Firefighting measures

	face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
HaloPlex ION 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
HaloPlex ION 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
HaloPlex ION Barcode Primer Cassette 1-16	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
	HaloPlex ION 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.
	HaloPlex ION 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 ION Barcode Primer Cassette 1-16	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.

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

Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Do not touch or walk through spilt material. Put on appropriate personal protective equipment. 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.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
: 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".
HaloPlex ION 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".
HaloPlex ION 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 ION Barcode Primer Cassette 1-16	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 - well A,	If specialised clothing is required to deal with the spillage,

SECTION 6: Accidental release measures

B, C, D, E, F, G, H	take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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).
HaloPlex ION 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).
HaloPlex ION 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 ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	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 - well A, B, C, D, E, F, G, H	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).

SECTION 6: Accidental release measures**6.3 Methods and materials for containment and cleaning up**

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. Dispose of via a licensed waste disposal contractor.
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. Dispose of via a licensed waste disposal contractor.
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.
HaloPlex ION 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.
HaloPlex ION 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 ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	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

SECTION 6: Accidental release measures

Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
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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). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.
	Ligation Solution	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 ingest. Avoid breathing vapour or mist. 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).
	HaloPlex ION Primer 1	Put on appropriate personal protective equipment (see Section 8).
	HaloPlex ION Primer 2	Put on appropriate personal protective equipment (see Section 8).
	HaloPlex ION Barcode Primer Cassette 1-16	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 ingest. Avoid breathing vapour or mist. 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 - well A, B, C, D, E, F, G, H	Put on appropriate personal protective equipment (see Section 8). Do not breathe vapour or mist. Do not ingest.

SECTION 7: Handling and storage

		Avoid contact with eyes, skin and clothing. 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.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Put on appropriate personal protective equipment (see Section 8). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	: 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.
	HaloPlex ION 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.
	HaloPlex ION 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 7: Handling and storage

HaloPlex ION Barcode Primer Cassette 1-16	Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
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 equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Enrichment Control DNA	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 1 - well A, B, C, D, E, F, G, H	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 - well A, B, C, D, E, F, G, H	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

: 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.
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.
BSA Solution	Store between the following temperatures: -20°C (-4°F). 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.
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

SECTION 7: Handling and storage

	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.
Ligation Solution	Storage temperature: -20°C (-4°F). 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.
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.
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.
HaloPlex ION 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.
HaloPlex ION 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.
HaloPlex ION Barcode Primer Cassette 1-16	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.
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. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store

SECTION 7: Handling and storage

Enrichment Control DNA	in unlabelled containers. Use appropriate containment to avoid environmental contamination. 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.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Storage temperature: -20°C (-4°F). 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.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Storage temperature: -20°C (-4°F). 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.

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.
HaloPlex ION Primer 1	Industrial applications, Professional applications.
HaloPlex ION Primer 2	Industrial applications, Professional applications.
HaloPlex ION Barcode	Industrial applications, Professional applications.
Primer Cassette 1-16	
Hybridization Solution	Industrial applications, Professional applications.
Enrichment Control DNA	Industrial applications, Professional applications.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Industrial applications, Professional applications.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Industrial applications, Professional applications.

Industrial sector specific solutions : Not applicable.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limits**

No exposure limit value known.

Recommended**monitoring procedures**

: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of

SECTION 8: Exposure controls/personal protection

exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

No DNELs available.

Predicted effect concentrations

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: chemical splash goggles.

Skin protection

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

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

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

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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**9.1 Information on basic physical and chemical properties****Appearance**

Physical state	: RE Buffer	Liquid.
	SSC Buffer	Liquid.
	BSA Solution	Liquid. [Clear.]
	DNA Ligase	Liquid. [Viscous liquid.]
	Ligation Solution	Liquid.
	Wash Solution	Liquid.
	Capture Solution	Liquid.
	HaloPlex ION Primer 1	Liquid.
	HaloPlex ION Primer 2	Liquid.
	HaloPlex ION Barcode	Liquid.

SECTION 9: Physical and chemical properties

	Primer Cassette 1-16	
	Hybridization Solution	Liquid.
	Enrichment Control	Liquid.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Liquid. [Clear.]
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Liquid. [Clear.]
Colour	: RE Buffer	Not available.
	SSC Buffer	Not available.
	BSA Solution	Colourless.
	DNA Ligase	Colourless.
	Ligation Solution	Not available.
	Wash Solution	Not available.
	Capture Solution	Not available.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode	Not available.
	Primer Cassette 1-16	
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Colourless.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Colourless.
Odour	: RE Buffer	Not available.
	SSC Buffer	Not available.
	BSA Solution	Odourless.
	DNA Ligase	Odourless.
	Ligation Solution	Not available.
	Wash Solution	Not available.
	Capture Solution	Not available.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode	Not available.
	Primer Cassette 1-16	
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Odourless.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Odourless.
Odour threshold	: 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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode	Not available.
	Primer Cassette 1-16	
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode	Not available.
	Primer Cassette 1-16	
	Hybridization Solution	7.5
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.
	Melting point/freezing point	: RE Buffer
SSC Buffer		0°C
BSA Solution		20°C
DNA Ligase		-23°C
Ligation Solution		0°C
Wash Solution		Not available.
Capture Solution		Not available.
HaloPlex ION Primer 1		0°C
HaloPlex ION Primer 2		0°C
HaloPlex ION Barcode		0°C
Primer Cassette 1-16		
Hybridization Solution		Not available.
Enrichment Control		0°C
DNA		
Enzyme Strip 1 - well A, B, C, D, E, F, G, H		20°C
Enzyme Strip 2 - well A, B, C, D, E, F, G, H		20°C
Initial boiling point and boiling range		: RE Buffer
	SSC Buffer	100°C
	BSA Solution	182°C
	DNA Ligase	182°C
	Ligation Solution	100°C
	Wash Solution	Not available.
	Capture Solution	Not available.
	HaloPlex ION Primer 1	100°C
	HaloPlex ION Primer 2	100°C
	HaloPlex ION Barcode	100°C
	Primer Cassette 1-16	
	Hybridization Solution	Not available.
	Enrichment Control	100°C
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	182°C
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	182°C
	Flash point	: RE Buffer
SSC Buffer		Not available.
BSA Solution		Closed cup: 160°C
DNA Ligase		Open cup: 176°C
Ligation Solution		Not available.
Wash Solution		Not available.
Capture Solution		Not available.
HaloPlex ION Primer 1		Not available.
HaloPlex ION Primer 2		Not available.
HaloPlex ION Barcode		Not available.
Primer Cassette 1-16		

SECTION 9: Physical and chemical properties

	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Closed cup: 160°C
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Closed cup: 160°C
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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode	Not available.
	Primer Cassette 1-16	
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.
Flammability (solid, gas)	: 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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode	Not available.
	Primer Cassette 1-16	
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.
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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode	Not available.
	Primer Cassette 1-16	
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.

SECTION 9: Physical and chemical properties

Vapour pressure	: RE Buffer	Not available.
	SSC Buffer	Not available.
	BSA Solution	<0.13 kPa [room temperature]
	DNA Ligase	0.4 kPa [room temperature]
	Ligation Solution	Not available.
	Wash Solution	Not available.
	Capture Solution	Not available.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode Primer Cassette 1-16	Not available.
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	<0.13 kPa [room temperature]
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	<0.13 kPa [room temperature]
	Vapour density	: RE Buffer
SSC Buffer		Not available.
BSA Solution		3.1 [Air = 1]
DNA Ligase		3.1 [Air = 1]
Ligation Solution		Not available.
Wash Solution		Not available.
Capture Solution		Not available.
HaloPlex ION Primer 1		Not available.
HaloPlex ION Primer 2		Not available.
HaloPlex ION Barcode Primer Cassette 1-16		Not available.
Hybridization Solution		Not available.
Enrichment Control		Not available.
DNA		
Enzyme Strip 1 - well A, B, C, D, E, F, G, H		3.1 [Air = 1]
Enzyme Strip 2 - well A, B, C, D, E, F, G, H		3.1 [Air = 1]
Relative density		: RE Buffer
	SSC Buffer	Not available.
	BSA Solution	1.262
	DNA Ligase	1.261
	Ligation Solution	Not available.
	Wash Solution	Not available.
	Capture Solution	Not available.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode Primer Cassette 1-16	Not available.
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	1.262
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	1.262
	Solubility(ies)	: RE Buffer
SSC Buffer		Easily soluble in the following materials: cold water and hot water.
BSA Solution		Soluble in the following materials: cold water and hot water.
DNA Ligase		Easily soluble in the following materials: cold water and hot water.
Ligation Solution		Easily soluble in the following materials: cold water and hot water.
Wash Solution		Soluble in the following materials: cold water and hot

SECTION 9: Physical and chemical properties

	Capture Solution	water. Easily soluble in the following materials: cold water and hot water.
	HaloPlex ION Primer 1	Easily soluble in the following materials: cold water and hot water.
	HaloPlex ION Primer 2	Easily soluble in the following materials: cold water and hot water.
	HaloPlex ION Barcode Primer Cassette 1-16	Easily soluble in the following materials: cold water and hot water.
	Hybridization Solution	Soluble in the following materials: cold water and hot water.
	Enrichment Control DNA	Easily soluble in the following materials: cold water and hot water.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Soluble in the following materials: cold water and hot water.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: 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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode Primer Cassette 1-16	Not available.
	Hybridization Solution	Not available.
	Enrichment Control DNA	Not available.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.
Auto-ignition temperature	: RE Buffer	Not available.
	SSC Buffer	Not available.
	BSA Solution	370°C
	DNA Ligase	Not available.
	Ligation Solution	Not available.
	Wash Solution	Not available.
	Capture Solution	Not available.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode Primer Cassette 1-16	Not available.
	Hybridization Solution	Not available.
	Enrichment Control DNA	Not available.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	370°C
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	370°C
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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode Primer Cassette 1-16	Not available.
	Hybridization Solution	Not available.

SECTION 9: Physical and chemical properties

	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.
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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode	Not available.
	Primer Cassette 1-16	
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.
Explosive properties	: 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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode	Not available.
	Primer Cassette 1-16	
	Hybridization Solution	Not available.
	Enrichment Control	Not available.
	DNA	
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: 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.
	Wash Solution	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.
	HaloPlex ION Primer 1	No specific test data related to reactivity available for this product or its ingredients.
	HaloPlex ION Primer 2	No specific test data related to reactivity available for this

SECTION 10: Stability and reactivity

HaloPlex ION Barcode	product or its ingredients.
Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	No specific test data related to reactivity available for this product or its ingredients.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
HaloPlex ION Primer 1	The product is stable.
HaloPlex ION Primer 2	The product is stable.
HaloPlex ION Barcode	The product is stable.
Primer Cassette 1-16	
Hybridization Solution	The product is stable.
Enrichment Control DNA	The product is stable.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	The product is stable.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
HaloPlex ION Primer 1	Under normal conditions of storage and use, hazardous reactions will not occur.
HaloPlex ION Primer 2	Under normal conditions of storage and use, hazardous reactions will not occur.
HaloPlex ION Barcode	Under normal conditions of storage and use, hazardous reactions will not occur.
Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	Under normal conditions of storage and use, hazardous reactions will not occur.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Under normal conditions of storage and use, hazardous reactions will not occur.

SECTION 10: Stability and reactivity

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.
		HaloPlex ION Primer 1	No specific data.
		HaloPlex ION Primer 2	No specific data.
		HaloPlex ION Barcode Primer Cassette 1-16	No specific data.
		Hybridization Solution	No specific data.
		Enrichment Control DNA	No specific data.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No specific data.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No specific data.
10.5 Incompatible materials	:	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.
		HaloPlex ION Primer 1	No specific data.
		HaloPlex ION Primer 2	No specific data.
		HaloPlex ION Barcode Primer Cassette 1-16	No specific data.
		Hybridization Solution	No specific data.
		Enrichment Control DNA	No specific data.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No specific data.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No specific data.
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.
		HaloPlex ION Primer 1	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		HaloPlex ION Primer 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		HaloPlex ION Barcode Primer Cassette 1-16	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		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 - well A, B, C, D, E, F, G, H	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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	-
Ligation Solution Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Wash Solution Formamide	LD50 Dermal	Rabbit	17 g/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
Sodium chloride	LC50 Inhalation Dusts and mists	Rat	>42 g/m ³	1 hours
	LD50 Oral	Rat	3000 mg/kg	-
Capture Solution Sodium chloride	LC50 Inhalation Dusts and mists	Rat	>42 g/m ³	1 hours
	LD50 Oral	Rat	3000 mg/kg	-
Hybridization Solution Formamide	LD50 Dermal	Rabbit	17 g/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
Sodium chloride	LC50 Inhalation Dusts and mists	Rat	>42 g/m ³	1 hours
	LD50 Oral	Rat	3000 mg/kg	-
Enzyme Strip 1 - well A, B, C, D, E, F, G, H Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Enzyme Strip 2 - well A, B, C, D, E, F, G, H Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Acute toxicity estimates

Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
BSA Solution Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
DNA Ligase Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Ligation Solution Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Wash Solution Formamide	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Sodium chloride	Eyes - Moderate irritant	Rabbit	24 hours 100	-

SECTION 11: Toxicological information

Capture Solution Sodium chloride	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	milligrams 10 milligrams 24 hours 500 milligrams	- -
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
Hybridization Solution Formamide	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	10 milligrams 24 hours 500 milligrams	- -
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
Sodium chloride	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	24 hours 100 milligrams 10 milligrams 24 hours 500 milligrams	- -
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
Enzyme Strip 1 - well A, B, C, D, E, F, G, H Glycerol	Eyes - Mild irritant Skin - Mild irritant	Rabbit Rabbit	- -	24 hours 500 milligrams 24 hours 500 milligrams	- -
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
Enzyme Strip 2 - well A, B, C, D, E, F, G, H Glycerol	Eyes - Mild irritant Skin - Mild irritant	Rabbit Rabbit	- -	24 hours 500 milligrams 24 hours 500 milligrams	- -
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
BSA Solution Glycerol	Category 2	Inhalation	kidneys
DNA Ligase Glycerol	Category 2	Inhalation	kidneys
Ligation Solution Glycerol	Category 2	Inhalation	kidneys
Enzyme Strip 1 - well A, B, C, D, E, F, G, H Glycerol	Category 2	Inhalation	kidneys
Enzyme Strip 2 - well A, B, C, D, E, F, G, H Glycerol	Category 2	Inhalation	kidneys

Aspiration hazard

Not available.

SECTION 11: Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Inhalation	<ul style="list-style-type: none"> : RE Buffer SSC Buffer BSA Solution DNA Ligase Ligation Solution Wash Solution Capture Solution HaloPlex ION Primer 1 HaloPlex ION Primer 2 HaloPlex ION Barcode Primer Cassette 1-16 Hybridization Solution Enrichment Control DNA Enzyme Strip 1 - well A, B, C, D, E, F, G, H Enzyme Strip 2 - well A, B, C, D, E, F, G, H 	<ul style="list-style-type: none"> No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	<ul style="list-style-type: none"> : RE Buffer SSC Buffer BSA Solution DNA Ligase Ligation Solution Wash Solution Capture Solution HaloPlex ION Primer 1 HaloPlex ION Primer 2 HaloPlex ION Barcode Primer Cassette 1-16 Hybridization Solution Enrichment Control DNA Enzyme Strip 1 - well A, B, C, D, E, F, G, H Enzyme Strip 2 - well A, B, C, D, E, F, G, H 	<ul style="list-style-type: none"> No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Irritating to mouth, throat and stomach. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	<ul style="list-style-type: none"> : RE Buffer SSC Buffer BSA Solution DNA Ligase Ligation Solution Wash Solution Capture Solution HaloPlex ION Primer 1 HaloPlex ION Primer 2 HaloPlex ION Barcode Primer Cassette 1-16 Hybridization Solution Enrichment Control DNA Enzyme Strip 1 - well A, B, C, D, E, F, G, H Enzyme Strip 2 - well A, B, C, D, E, F, G, H 	<ul style="list-style-type: none"> No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Eye contact	<ul style="list-style-type: none"> : RE Buffer SSC Buffer BSA Solution DNA Ligase Ligation Solution Wash Solution Capture Solution HaloPlex ION Primer 1 	<ul style="list-style-type: none"> No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

SECTION 11: Toxicological information

HaloPlex ION Primer 2	No known significant effects or critical hazards.
HaloPlex ION Barcode	No known significant effects or critical hazards.
Primer Cassette 1-16	
Hybridization Solution	Causes serious eye irritation.
Enrichment Control DNA	No known significant effects or critical hazards.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
		HaloPlex ION Primer 1	No specific data.
		HaloPlex ION Primer 2	No specific data.
		HaloPlex ION Barcode Primer Cassette 1-16 Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
Ingestion	:	Enrichment Control DNA	No specific data.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No specific data.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No specific data.
		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 HaloPlex ION Primer 1 HaloPlex ION Primer 2 HaloPlex ION Barcode Primer Cassette 1-16 Hybridization Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
Skin contact	:	Enrichment Control DNA	No specific data.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No specific data.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No specific data.
		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

SECTION 11: Toxicological information

	Capture Solution	skeletal malformations
	HaloPlex ION Primer 1	No specific data.
	HaloPlex ION Primer 2	No specific data.
	HaloPlex ION Barcode	No specific data.
	Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	No specific data.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
	HaloPlex ION Primer 1	No specific data.
	HaloPlex ION Primer 2	No specific data.
	HaloPlex ION Barcode	No specific data.
	Primer Cassette 1-16	No specific data.
	Hybridization Solution	Adverse symptoms may include the following: pain or irritation watering redness
	Enrichment Control DNA	No specific data.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No specific data.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: 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	May cause damage to organs through prolonged or repeated exposure.
	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.
	HaloPlex ION Primer 1	No known significant effects or critical hazards.
	HaloPlex ION Primer 2	No known significant effects or critical hazards.
	HaloPlex ION Barcode	No known significant effects or critical hazards.
	Primer Cassette 1-16	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 - well A,	May cause damage to organs through prolonged or

SECTION 11: Toxicological information

	B, C, D, E, F, G, H	repeated exposure.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	May cause damage to organs through prolonged or repeated exposure.
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	No known significant effects or critical hazards.
	Capture Solution	No known significant effects or critical hazards.
	HaloPlex ION Primer 1	No known significant effects or critical hazards.
	HaloPlex ION Primer 2	No known significant effects or critical hazards.
	HaloPlex ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	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.
	HaloPlex ION Primer 1	No known significant effects or critical hazards.
	HaloPlex ION Primer 2	No known significant effects or critical hazards.
	HaloPlex ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
Teratogenicity	: 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 the unborn child.
	Capture Solution	No known significant effects or critical hazards.
	HaloPlex ION Primer 1	No known significant effects or critical hazards.
	HaloPlex ION Primer 2	No known significant effects or critical hazards.
	HaloPlex ION Barcode Primer Cassette 1-16	No known significant effects or critical hazards.
	Hybridization Solution	May damage the unborn child.
	Enrichment Control DNA	No known significant effects or critical hazards.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
Developmental effects	: 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.
	HaloPlex ION Primer 1	No known significant effects or critical hazards.
	HaloPlex ION Primer 2	No known significant effects or critical hazards.
	HaloPlex ION Barcode Primer Cassette 1-16	No known significant effects or critical hazards.

SECTION 11: Toxicological information

	Hybridization Solution	No known significant effects or critical hazards.
	Enrichment Control DNA	No known significant effects or critical hazards.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
Fertility effects	: 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.
	HaloPlex ION Primer 1	No known significant effects or critical hazards.
	HaloPlex ION Primer 2	No known significant effects or critical hazards.
	HaloPlex ION Barcode Primer Cassette 1-16	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 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	No known significant effects or critical hazards.
Toxicokinetics		
Absorption	: 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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode Primer Cassette 1-16	Not available.
	Hybridization Solution	Not available.
	Enrichment Control DNA	Not available.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.
Distribution	: 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.
	HaloPlex ION Primer 1	Not available.
	HaloPlex ION Primer 2	Not available.
	HaloPlex ION Barcode Primer Cassette 1-16	Not available.
	Hybridization Solution	Not available.
	Enrichment Control DNA	Not available.
	Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.

SECTION 11: Toxicological information

Metabolism	:	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.	
		HaloPlex ION Primer 1	Not available.	
		HaloPlex ION Primer 2	Not available.	
		HaloPlex ION Barcode Primer Cassette 1-16	Not available.	
		Hybridization Solution	Not available.	
		Enrichment Control DNA	Not available.	
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.	
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.	
	Elimination	:	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.	
		HaloPlex ION Primer 1	Not available.	
		HaloPlex ION Primer 2	Not available.	
		HaloPlex ION Barcode Primer Cassette 1-16	Not available.	
		Hybridization Solution	Not available.	
		Enrichment Control DNA	Not available.	
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not available.	
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not available.	
Other information		:	Not available.	

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Wash Solution Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm3 Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
Capture Solution Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm3 Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours

SECTION 12: Ecological information

Hybridization Solution Sodium chloride	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm3 Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours	
Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days	
Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks	

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
BSA Solution Glycerol	-1.76	-	low
DNA Ligase Glycerol	-1.76	-	low
Ligation Solution Glycerol	-1.76	-	low
Wash Solution Formamide	-0.82	-	low
Hybridization Solution Formamide	-0.82	-	low
Enzyme Strip 1 - well A, B, C, D, E, F, G, H Glycerol	-1.76	-	low
Enzyme Strip 2 - well A, B, C, D, E, F, G, H 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

PBT : Not applicable.

vPvB : Not applicable.

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 : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulatory information

ADR/RID / IMDG / IATA : Not regulated.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Substances of very high concern

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

Other EU regulations

Europe inventory : At least one component is not listed.

Black List Chemicals : Not listed

Priority List Chemicals : Not listed

Integrated pollution prevention and control list (IPPC) - Air : Not listed

Integrated pollution prevention and control list (IPPC) - Water : Not listed

SECTION 15: Regulatory information

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
Wash Solution Formamide	-	-	Repr. 1B, H360D (Unborn child)	-
Hybridization Solution Formamide	-	-	Repr. 1B, H360D (Unborn child)	-

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

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]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
DNA Ligase STOT RE 2, H373	Calculation method
Wash Solution Repr. 1B, H360D (Unborn child)	Calculation method
Hybridization Solution Eye Irrit. 2, H319 Repr. 1B, H360D (Unborn child)	Calculation method Calculation method
Enzyme Strip 1 - well A, B, C, D, E, F, G, H STOT RE 2, H373	Calculation method
Enzyme Strip 2 - well A, B, C, D, E, F, G, H STOT RE 2, H373	Calculation method

Full text of abbreviated H statements : **BSA Solution**
 H373 (kidneys) (inhalation) May cause damage to organs through prolonged or repeated exposure if inhaled. (kidneys)

DNA Ligase
 H373
 H373 (kidneys) (inhalation) May cause damage to organs through prolonged or repeated exposure.
 May cause damage to organs through prolonged or repeated exposure if inhaled. (kidneys)

Ligation Solution
 H373 (kidneys) (inhalation) May cause damage to organs through prolonged or repeated exposure if inhaled. (kidneys)

Wash Solution
 H319
 H360D (Unborn child) Causes serious eye irritation.
 May damage the unborn child.

Capture Solution
 H319 Causes serious eye irritation.

SECTION 16: Other information

Hybridization Solution

H319 Causes serious eye irritation.
 H360D (Unborn child) May damage the unborn child.

**Enzyme Strip 1 - well A,
 B, C, D, E, F, G, H**

H373 May cause damage to organs through prolonged or repeated exposure.
 H373 (kidneys) May cause damage to organs through prolonged or repeated exposure if inhaled. (kidneys)
 (inhalation)

**Enzyme Strip 2 - well A,
 B, C, D, E, F, G, H**

H373 May cause damage to organs through prolonged or repeated exposure.
 H373 (kidneys) May cause damage to organs through prolonged or repeated exposure if inhaled. (kidneys)
 (inhalation)

Full text of classifications [CLP/GHS]

BSA Solution

STOT RE 2, H373 (kidneys) (inhalation) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (inhalation) - Category 2

DNA Ligase

STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
 STOT RE 2, H373 (kidneys) (inhalation) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (inhalation) - Category 2

Ligation Solution

STOT RE 2, H373 (kidneys) (inhalation) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (inhalation) - Category 2

Wash Solution

Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
 Repr. 1B, H360D TOXIC TO REPRODUCTION (Unborn child) - Category 1B
 (Unborn child)

Capture Solution

Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2

Hybridization Solution

Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
 Repr. 1B, H360D TOXIC TO REPRODUCTION (Unborn child) - Category 1B
 (Unborn child)

**Enzyme Strip 1 - well A,
 B, C, D, E, F, G, H**

STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
 STOT RE 2, H373 (kidneys) (inhalation) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (inhalation) - Category 2

**Enzyme Strip 2 - well A,
 B, C, D, E, F, G, H**

STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
 STOT RE 2, H373 (kidneys) (inhalation) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (inhalation) - Category 2

Full text of abbreviated R phrases

: RE Buffer Not applicable.
 SSC Buffer Not applicable.
 BSA Solution Not applicable.
 DNA Ligase Not applicable.
 Ligation Solution Not applicable.
 Wash Solution R61- May cause harm to the unborn child.
 R36- Irritating to eyes.

SECTION 16: Other information

Capture Solution	R36- Irritating to eyes.
HaloPlex ION Primer 1	Not applicable.
HaloPlex ION Primer 2	Not applicable.
HaloPlex ION Barcode Primer Cassette 1-16	Not applicable.
Hybridization Solution	R61- May cause harm to the unborn child. R36- Irritating to eyes.
Enrichment Control DNA	Not applicable.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not applicable.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not applicable.
RE Buffer	Not applicable.
SSC Buffer	Not applicable.
BSA Solution	Not applicable.
DNA Ligase	Not applicable.
Ligation Solution	Not applicable.
Wash Solution	Repr. Cat. 2 - Toxic to reproduction category 2 Xi - Irritant
Capture Solution	Xi - Irritant
HaloPlex ION Primer 1	Not applicable.
HaloPlex ION Primer 2	Not applicable.
HaloPlex ION Barcode Primer Cassette 1-16	Not applicable.
Hybridization Solution	Repr. Cat. 2 - Toxic to reproduction category 2 Xi - Irritant
Enrichment Control DNA	Not applicable.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not applicable.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not applicable.

**Full text of classifications
[DSD/DPD]****Date of issue/ Date of
revision**

: 02/04/2014

Date of previous issue

: No previous validation.

Version

: 1

Nota *

: * HaloPlex Indexing Primer Cassette 1-16:5190-5366_5190-5367_5190-5368_5190-5369_5190-5370_5190-5371_5190-5372_5190-5373_5190-5374_5190-5375_5190-5376_5190-5377_5190-5378_5190-5379_5190-5380_5190-5381

Notice to reader

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