Material Safety Data Sheet

Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

HaloPlex IONPrepack-16 reactions, Part Number 5190-7325

1 . Identification of the material and supplier

Names

Product name	:	HaloPlex IONPrepack-16 reactions, Part Number 5190-7325
Part No. (Chemical 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 Primer Cassette 1-16 various* 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
ADG	:	Not regulated as Dangerous Goods according to the ADG Code

Supplier

Supplier/Manufacturer	:	Agilent Technologies Australia Pty Ltd 679 Springvale Road Mulgrave Victoria 3170, Australia 1800 802 402
Emergency telephone number	:	CHEMTREC®: +(44)-870-8200418

Uses

Area of application	:	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 Primer Cassette 1-16 Industrial applications, Professional applications. Hybridization Solution Industrial applications, Professional applications. Enrichment Control DNA Industrial applications, Professional applications.

1 . Identification of the material and supplier

	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.

Material 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 Cassette 1-16	0.015 ml x 16 Tubes
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

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**

2 . Hazards identification

Classification :

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

Risk phrases :

RE Buffer	Not classified.
SSC Buffer	Not classified.
BSA Solution	Not classified.
DNA Ligase	Not classified.
Ligation Solution	Not classified.
Wash Solution	R61- May cause harm to the unborn child.
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	R61- May cause harm to the unborn child.
Enrichment Control DNA	Not classified.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Not classified.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Not classified.

2 . Hazards identification

Safety phrases	:	RE Buffer	S36- Wear suitable protective clothing.
		SSC Buffer	S36- Wear suitable protective clothing.
		BSA Solution	S23- Do not breathe vapour. S24/25- Avoid contact with skin and eyes.
		DNA Ligase	S36- Wear suitable protective clothing.
		Ligation Solution	S36- Wear suitable protective clothing.
		Wash Solution	S53- Avoid exposure - obtain special instructions before use. S36- Wear suitable protective clothing.
		Capture Solution	S36- Wear suitable protective clothing.
		HaloPlex ION Primer 1	S36- Wear suitable protective clothing.
		HaloPlex ION Primer 2	S36- Wear suitable protective clothing.
		HaloPlex ION Barcode Primer Cassette 1-16	S36- Wear suitable protective clothing.
		Hybridization Solution	S53- Avoid exposure - obtain special instructions before use. S36- Wear suitable protective clothing.
		Enrichment Control DNA	S36- Wear suitable protective clothing.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	S23- Do not breathe vapour. S24/25- Avoid contact with skin and eyes.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	S23- Do not breathe vapour. S24/25- Avoid contact with skin and eyes.
Statement of hazardous/ dangerous nature	:	RE Buffer	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		SSC Buffer	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		BSA Solution	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		DNA Ligase	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		Ligation Solution	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		Wash Solution	HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		Capture Solution	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		HaloPlex ION Primer 1	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		HaloPlex ION Primer 2	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		HaloPlex ION Barcode Primer Cassette 1-16	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		Hybridization Solution	HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		Enrichment Control DNA	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3 . Composition/information on ingredients

Mixture	:	RE Buffer	Yes.
		SSC Buffer	Yes.
		BSA Solution	Yes.
		DNA Ligase	Yes.
		Ligation Solution	Yes.
		Wash Solution	Yes.
		Capture Solution	Yes.
		HaloPlex ION Primer 1	Yes.
		HaloPlex ION Primer 2	Yes.
		HaloPlex ION Barcode Primer Cassette 1-16	Yes.
		Hybridization Solution	Yes.

3 . Composition/information on ingredients

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

Ingredient name	CAS number	Concentration
BSA Solution		
Glycerol	56-81-5	<10
DNA Ligase		
Glycerol	56-81-5	30 - 60
Ligation Solution		
Glycerol	56-81-5	<10
Wash Solution		
Formamide	75-12-7	10 - <30
Hybridization Solution		
Formamide	75-12-7	30 - 60
Enzyme Strip 1 - well A, B, C, D, E, F, G, H		
Glycerol	56-81-5	30 - 60
Enzyme Strip 2 - well A, B, C, D, E, F, G, H		
Glycerol	56-81-5	30 - 60

Other ingredients, determined not to be hazardous according to Safe Work Australia criteria, and not dangerous according to the ADG Code, make up the product concentration to 100%.

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.

4 . First-aid measures

Inhalation :

RE Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
SSC Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
BSA Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
DNA Ligase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Ligation Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Wash Solution	Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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

4 . First-aid measures

		waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Capture Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	HaloPlex ION Primer 1	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	Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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. Get medical attention if symptoms occur.
	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. Get medical attention if symptoms occur.
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

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	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 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.
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	Get medical attention immediately. 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. 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

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			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	Get medical attention immediately. 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. 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 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 2 - well A, B, C, D, E, F, G, H	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.
Skin contact	:	RE Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		SSC Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		BSA Solution	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		DNA Ligase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		Ligation Solution	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		Wash Solution	Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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		Continue to rinse for at least 10 minutes. 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	Get medical attention immediately. 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. 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. Get medical attention if symptoms occur.
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Eye contact :	RE Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	SSC Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	BSA Solution	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	DNA Ligase	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Ligation Solution	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Wash Solution	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention 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.

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	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 if irritation occurs.
	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. Get medical attention if irritation occurs.
	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. Get medical attention if irritation occurs.
Protection of first-aiders :	RE Buffer	No action shall be taken involving any personal risk or without suitable training.
	SSC Buffer	No action shall be taken involving any personal risk or without suitable training.
	BSA Solution	No action shall be taken involving any personal risk or without suitable training.
	DNA Ligase	No action shall be taken involving any personal risk or without suitable training.
	Ligation Solution	No action shall be taken involving any personal risk or without suitable training.
	Wash Solution	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
	Capture Solution	No action shall be taken involving any personal risk or without suitable training.
	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.

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		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.
Advice to doctor	:	RE Buffer	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		SSC Buffer	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		BSA Solution	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		DNA Ligase	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Ligation Solution	No specific treatment. 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	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		HaloPlex ION Primer 1	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		HaloPlex ION Primer 2	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		HaloPlex ION Barcode Primer Cassette 1-16	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Hybridization Solution	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		Enrichment Control DNA	No specific treatment. 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	No specific treatment. 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	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Extinguishing media

Suitable	:	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.
Not suitable	:	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.
Special exposure hazards	:	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

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	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.
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,	In a fire or if heated, a pressure increase will

5 . Fire-fighting measures

	E, F, G, H	occur and the container may burst.
Hazardous thermal decomposition 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
Special protective equipment for fire-fighters :	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.	

6 . Accidental release measures

Personal precautions :	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 (see Section 8).
	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 (see

6 . Accidental release measures

	Section 8).
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 (see Section 8).
DNA Ligase	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment (see Section 8).
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 (see Section 8).
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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
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 (see Section 8).
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 (see Section 8).
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 (see Section 8).
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 (see Section 8).
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. Do not breathe vapour or mist. Provide adequate

6 . Accidental release measures

		ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
	Enrichment Control DNA	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment (see Section 8).
	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. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment (see Section 8).
	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. Put on appropriate personal protective equipment (see Section 8).
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

6 . Accidental release measures

		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).
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

6 . Accidental release measures

	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 of via a licensed waste disposal contractor.
Enzyme Strip 2 - 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 of via a licensed waste disposal contractor.

7 . Handling and storage

Handling	:	RE Buffer	Put on appropriate personal protective equipment (see Section 8). 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.
		SSC Buffer	Put on appropriate personal protective equipment (see Section 8). 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.
		BSA Solution	Put on appropriate personal protective equipment (see Section 8). 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.
		DNA Ligase	Put on appropriate personal protective equipment (see Section 8). 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.
		Ligation Solution	Put on appropriate personal protective equipment (see Section 8). 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.
		Wash Solution	Put on appropriate personal protective equipment (see Section 8). 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. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
		Capture Solution	Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and

7 . Handling and storage

	face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.
HaloPlex ION Primer 1	Put on appropriate personal protective equipment (see Section 8). 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.
HaloPlex ION Primer 2	Put on appropriate personal protective equipment (see Section 8). 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.
HaloPlex ION Barcode Primer Cassette 1-16	Put on appropriate personal protective equipment (see Section 8). 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.
Hybridization Solution	Put on appropriate personal protective equipment (see Section 8). 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. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Enrichment Control DNA	Put on appropriate personal protective equipment (see Section 8). 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.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Put on appropriate personal protective equipment (see Section 8). 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.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Put on appropriate personal protective equipment (see Section 8). Eating, drinking

7 . Handling and storage

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

7 . Handling and storage

	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.
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. 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 . Handling and storage

	Enrichment Control DNA	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
	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.
Combustible liquid :	RE Buffer	Not applicable.
	SSC Buffer	Not applicable.
	BSA Solution	Combustible liquid Class C2 (AS 1940).
	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 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	Combustible liquid Class C2 (AS 1940).
	Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Combustible liquid Class C2 (AS 1940).

8 . Exposure controls/personal protection

Occupational exposure limits

8 . Exposure controls/personal protection

Ingredient name	Exposure limits
BSA Solution Glycerol	**Safe Work Australia (Australia, 4/2013).** TWA: 10 mg/m³ 8 hours.
DNA Ligase Glycerol	**Safe Work Australia (Australia, 4/2013).** TWA: 10 mg/m³ 8 hours.
Ligation Solution Glycerol	**Safe Work Australia (Australia, 4/2013).** TWA: 10 mg/m³ 8 hours.
Wash Solution Formamide	**Safe Work Australia (Australia, 4/2013). Absorbed through skin.** TWA: 18 mg/m³ 8 hours. TWA: 10 ppm 8 hours.
Hybridization Solution Formamide	**Safe Work Australia (Australia, 4/2013). Absorbed through skin.** TWA: 18 mg/m³ 8 hours. TWA: 10 ppm 8 hours.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H Glycerol	**Safe Work Australia (Australia, 4/2013).** TWA: 10 mg/m³ 8 hours.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H Glycerol	**Safe Work Australia (Australia, 4/2013).** TWA: 10 mg/m³ 8 hours.

No additional exposure standard allocated for other ingredients/components covered by the MSDS other than those listed in the table above.

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

Exposure controls

Engineering measures : 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.

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.

Eyes : 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 or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

8 . Exposure controls/personal protection

Hands : 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.

Respiratory : 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.

Skin : 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.

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.

9 . Physical and chemical properties

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 Primer Cassette 1-16	Liquid.
Hybridization Solution	Liquid.
Enrichment Control DNA	Liquid.
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 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	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.

9 . Physical and chemical properties

		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	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 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.
Boiling point	:	RE Buffer	100°C (212°F)
		SSC Buffer	100°C (212°F)
		BSA Solution	182°C (359.6°F)
		DNA Ligase	182°C (359.6°F)
		Ligation Solution	100°C (212°F)
		Wash Solution	Not available.
		Capture Solution	Not available.
		HaloPlex ION Primer 1	100°C (212°F)
		HaloPlex ION Primer 2	100°C (212°F)
		HaloPlex ION Barcode Primer Cassette 1-16	100°C (212°F)
		Hybridization Solution	Not available.
		Enrichment Control DNA	100°C (212°F)
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	182°C (359.6°F)
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	182°C (359.6°F)
Melting point	:	RE Buffer	0°C (32°F)
		SSC Buffer	0°C (32°F)
		BSA Solution	20°C (68°F)
		DNA Ligase	-23°C (-9.4°F)
		Ligation Solution	0°C (32°F)
		Wash Solution	Not available.
		Capture Solution	Not available.
		HaloPlex ION Primer 1	0°C (32°F)
		HaloPlex ION Primer 2	0°C (32°F)
		HaloPlex ION Barcode Primer Cassette 1-16	0°C (32°F)
		Hybridization Solution	Not available.
		Enrichment Control DNA	0°C (32°F)
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	20°C (68°F)
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	20°C (68°F)

9 . Physical and chemical properties

Vapour pressure	:	RE Buffer	Not available.
		SSC Buffer	Not available.
		BSA Solution	<0.13 kPa (<1 mm Hg) [room temperature]
		DNA Ligase	0.4 kPa (3 mm Hg) [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 DNA	Not available.
		Enzyme Strip 1 - well A, B, C, D, E, F, G, H	<0.13 kPa (<1 mm Hg) [room temperature]
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	<0.13 kPa (<1 mm Hg) [room temperature]
Relative density	:	RE Buffer	Not available.
		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 DNA	Not available.
		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
Flash point	:	RE Buffer	Not available.
		SSC Buffer	Not available.
		BSA Solution	Closed cup: 160°C (320°F)
		DNA Ligase	Open cup: 176°C (348.8°F)
		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	Closed cup: 160°C (320°F)
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Closed cup: 160°C (320°F)
Flammable 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 Primer Cassette 1-16	Not available.
		Hybridization Solution	Not available.
		Enrichment Control DNA	Not available.

9 . Physical and chemical properties

		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.
Vapour density	:	RE Buffer	Not available.
		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 DNA	Not available.
		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]
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 Primer Cassette 1-16	Not available.
		Hybridization Solution	7.5
		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.
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 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 (698°F)
		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.

9 . Physical and chemical properties

		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 (698°F)
		Enzyme Strip 2 - well A, B, C, D, E, F, G, H	370°C (698°F)
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 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.
Solubility	:	RE Buffer	Easily soluble in the following materials: cold water and hot water.
		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 water.
		Capture Solution	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.

10 . Stability and reactivity

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.

10 . Stability and reactivity

		HaloPlex ION Barcode Primer Cassette 1-16	The product is stable.
		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.
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 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.
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.
Materials 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.

10 . Stability and reactivity

	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.
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.

11 . Toxicological information

Potential acute health effects

Inhalation :	RE Buffer	No known significant effects or critical hazards.
	SSC Buffer	No known significant effects or critical hazards.
	BSA Solution	No known significant effects or critical hazards.
	DNA Ligase	No known significant effects or critical hazards.
	Ligation Solution	No known significant effects or critical hazards.
	Wash Solution	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	No known significant effects or critical hazards.

11 . Toxicological information

		Cassette 1-16	
		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.
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.
		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.
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.
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	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.

Acute toxicity

11 . Toxicological information

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	-
Hybridization Solution				
Formamide	LD50 Dermal	Rabbit	17 g/kg	-
	LD50 Oral	Rat	4000 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	-

Conclusion/Summary : Not available.

Potential chronic health effects

Chronic toxicity

Conclusion/Summary : 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	-
Hybridization Solution					
Formamide	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
Enzyme Strip 1 - well A, B, C, D, E, F, G, H					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

11 . Toxicological information

	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Enzyme Strip 2 - well A, B, C, D, E, F, G, H					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Product name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
Wash Solution				
Formamide	-	-	Repr. Cat. 2; R61	-
Hybridization Solution				
Formamide	-	-	Repr. Cat. 2; R61	-

Chronic 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.

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.

11 . Toxicological information

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 cause birth defects.
		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 cause birth defects.
		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.
		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.

11 . Toxicological information

	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

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	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.
Ingestion :	RE Buffer	No specific data.
	SSC Buffer	No specific data.
	BSA Solution	No specific data.
	DNA Ligase	No specific data.
	Ligation Solution	No specific data.
	Wash Solution	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Capture Solution	No specific data.
	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	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 :	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	No specific data.

11 . Toxicological information

		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.
Eyes	:	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	No specific data.
		Cassette 1-16	
		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.
Other adverse symptoms	:	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	Not available.
		Cassette 1-16	
		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.
Target organs	:	RE Buffer	Not available.
		SSC Buffer	Not available.
		BSA Solution	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.
		DNA Ligase	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.
		Ligation Solution	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.
		Wash Solution	Contains material which may cause damage to the following organs: kidneys, the reproductive system, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, stomach.
		Capture Solution	Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes, stomach.
		HaloPlex ION Primer 1	Not available.

11 . Toxicological information

HaloPlex ION Primer 2	Not available.
HaloPlex ION Barcode Primer Cassette 1-16	Not available.
Hybridization Solution	Contains material which may cause damage to the following organs: kidneys, the reproductive system, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, stomach.
Enrichment Control DNA	Not available.
Enzyme Strip 1 - well A, B, C, D, E, F, G, H	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.
Enzyme Strip 2 - well A, B, C, D, E, F, G, H	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.

12 . Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Other ecological information

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

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

13 . Disposal considerations

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

14 . Transport information

Regulatory information

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

15 . Regulatory information

Standard Uniform Schedule of Medicine and Poisons

5

Control of Scheduled Carcinogenic Substances

Ingredient name	Schedule
No listed substance	

Australia inventory (AICS) : Not determined.

16 . Other information

Remarks :

Date of issue : 02/04/2014

Date of previous issue : No previous validation.

Indicates information that has changed from previously issued version.

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**

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