

SAFETY DATA SHEET



MiracleHyb Hybridization Solution, Part Number 201223

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

1.1 Product identifier

Product name : MiracleHyb Hybridization Solution, Part Number 201223
Part No. (Kit) : 201223
Part No. : MiracleHyb Probe 201223-24
Preparation Buffer
MiracleHyb Hybridization Solution 201223-14

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

Identified uses	
Analytical reagent.	
MiracleHyb Probe Preparation Buffer	2 x 1 mL
MiracleHyb Hybridization Solution	125 mL

1.3 Details of the supplier of the safety data sheet

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

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

1.4 Emergency telephone number

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : MiracleHyb Probe Mixture
Preparation Buffer
MiracleHyb Hybridization Solution Mixture

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

MiracleHyb Hybridization Solution

H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

Ingredients of unknown ecotoxicity : MiracleHyb Hybridization Solution Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2%

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

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

2.2 Label elements

Date of issue/Date of revision : 19/10/2016

SECTION 2: Hazards identification

Hazard pictograms :



Signal word : MiracleHyb Probe No signal word.
Preparation Buffer
MiracleHyb Hybridization No signal word.
Solution

Hazard statements : MiracleHyb Probe No known significant effects or critical hazards.
Preparation Buffer
MiracleHyb Hybridization No known significant effects or critical hazards.
Solution

Precautionary statements

Prevention : MiracleHyb Probe Not applicable.
Preparation Buffer
MiracleHyb Hybridization Not applicable.
Solution

Response : MiracleHyb Probe Not applicable.
Preparation Buffer
MiracleHyb Hybridization Not applicable.
Solution

Storage : MiracleHyb Probe Not applicable.
Preparation Buffer
MiracleHyb Hybridization Not applicable.
Solution

Disposal : MiracleHyb Probe Not applicable.
Preparation Buffer
MiracleHyb Hybridization Not applicable.
Solution

Hazardous ingredients : MiracleHyb Hybridization Not applicable.
Solution

Supplemental label elements : MiracleHyb Probe Not applicable.
Preparation Buffer
MiracleHyb Hybridization Safety data sheet available on request.
Solution

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : MiracleHyb Probe Not applicable.
Preparation Buffer
MiracleHyb Hybridization Not applicable.
Solution

Special packaging requirements

Tactile warning of danger : MiracleHyb Probe Not applicable.
Preparation Buffer
MiracleHyb Hybridization Not applicable.
Solution

2.3 Other hazards

Other hazards which do not result in classification : MiracleHyb Probe None known.
Preparation Buffer
MiracleHyb Hybridization None known.
Solution

SECTION 3: Composition/information on ingredients

3.2 Mixtures : MiracleHyb Probe Preparation Mixture
 Buffer
 MiracleHyb Hybridization Solution Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
MiracleHyb Hybridization Solution Lithium chloride	EC: 231-212-3 CAS: 7447-41-8	≤3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319	[1]
Heparin	EC: 232-681-7 CAS: 9005-49-6	≤3	Acute Tox. 4, H302	[1]
Sodium dodecyl sulphate	EC: 205-788-1 CAS: 151-21-3	≤3	Flam. Sol. 2, H228 Acute Tox. 4, H302 Acute Tox. 3, H311 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 3, H412 See Section 16 for the full text of the H statements declared above.	[1]

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

Type

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: MiracleHyb Probe Preparation 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.
	MiracleHyb Hybridization 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.
Inhalation	: MiracleHyb Probe Preparation Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	MiracleHyb Hybridization Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: MiracleHyb Probe Preparation Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	MiracleHyb Hybridization Solution	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

SECTION 4: First aid measures

Ingestion	: MiracleHyb Probe Preparation 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.
	MiracleHyb Hybridization 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.
Protection of first-aiders	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed**Potential acute health effects**

Eye contact	: MiracleHyb Probe Preparation Buffer	No known significant effects or critical hazards.
	MiracleHyb Hybridization Solution	No known significant effects or critical hazards.
Inhalation	: MiracleHyb Probe Preparation Buffer	No known significant effects or critical hazards.
	MiracleHyb Hybridization Solution	No known significant effects or critical hazards.
Skin contact	: MiracleHyb Probe Preparation Buffer	No known significant effects or critical hazards.
	MiracleHyb Hybridization Solution	No known significant effects or critical hazards.
Ingestion	: MiracleHyb Probe Preparation Buffer	No known significant effects or critical hazards.
	MiracleHyb Hybridization Solution	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: MiracleHyb Probe Preparation Buffer	No specific data.
	MiracleHyb Hybridization Solution	No specific data.
Inhalation	: MiracleHyb Probe Preparation Buffer	No specific data.
	MiracleHyb Hybridization Solution	No specific data.
Skin contact	: MiracleHyb Probe Preparation Buffer	No specific data.
	MiracleHyb Hybridization Solution	No specific data.
Ingestion	: MiracleHyb Probe Preparation Buffer	No specific data.
	MiracleHyb Hybridization Solution	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: MiracleHyb Probe Preparation Buffer	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	MiracleHyb Hybridization Solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 4: First aid measures

Specific treatments	: MiracleHyb Probe Preparation Buffer	No specific treatment.
	MiracleHyb Hybridization Solution	No specific treatment.

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

Suitable extinguishing media	: MiracleHyb Probe Preparation Buffer	Use an extinguishing agent suitable for the surrounding fire.
	MiracleHyb Hybridization Solution	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: MiracleHyb Probe Preparation Buffer	None known.
	MiracleHyb Hybridization Solution	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: MiracleHyb Probe Preparation Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	MiracleHyb Hybridization Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: MiracleHyb Probe Preparation Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	MiracleHyb Hybridization Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides

5.3 Advice for firefighters

Special precautions for fire-fighters	: MiracleHyb Probe Preparation 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.
	MiracleHyb 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.
Special protective equipment for fire-fighters	: MiracleHyb Probe Preparation Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	MiracleHyb Hybridization Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: MiracleHyb Probe Preparation 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 spilled material. Put on appropriate personal protective equipment.
	MiracleHyb 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 spilled material. Put on appropriate personal protective equipment.
For emergency responders	: MiracleHyb Probe Preparation Buffer	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	MiracleHyb Hybridization Solution	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: MiracleHyb Probe Preparation Buffer	Avoid dispersal of spilled 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).
MiracleHyb Hybridization Solution	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	: MiracleHyb Probe Preparation 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.
	MiracleHyb 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.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	: MiracleHyb Probe Preparation Buffer	Put on appropriate personal protective equipment (see Section 8).
	MiracleHyb Hybridization Solution	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: MiracleHyb Probe Preparation Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	MiracleHyb Hybridization Solution	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating,

SECTION 7: Handling and storage

drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage	: MiracleHyb Probe Preparation 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.
	MiracleHyb 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.

7.3 Specific end use(s)

Recommendations	: MiracleHyb Probe Preparation Buffer	Industrial applications, Professional applications.
	MiracleHyb Hybridization Solution	Industrial applications, Professional applications.
Industrial sector specific solutions	: MiracleHyb Probe Preparation Buffer	Not applicable.
	MiracleHyb Hybridization Solution	Not applicable.

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

No exposure limit value known.

Recommended monitoring procedures

: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

SECTION 8: Exposure controls/personal protection

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

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

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

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

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: MiracleHyb Probe	Liquid.
	Preparation Buffer	
Colour	MiracleHyb	Liquid.
	Hybridization Solution	
Odour	MiracleHyb Probe	Not available.
	Preparation Buffer	
Odour threshold	MiracleHyb	Not available.
	Hybridization Solution	
pH	MiracleHyb Probe	Not available.
	Preparation Buffer	
Melting point/freezing point	MiracleHyb	5.5
	Hybridization Solution	
Melting point/freezing point	MiracleHyb Probe	0°C
	Preparation Buffer	
Melting point/freezing point	MiracleHyb	Not available.
	Hybridization Solution	

SECTION 9: Physical and chemical properties

Initial boiling point and boiling range	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	100°C Not available.
Flash point	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Evaporation rate	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Flammability (solid, gas)	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not applicable. Not applicable.
Upper/lower flammability or explosive limits	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Vapour pressure	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Vapour density	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Relative density	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Solubility(ies)	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Auto-ignition temperature	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Decomposition temperature	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Viscosity	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Explosive properties	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.
Oxidising properties	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Not available. Not available.

SECTION 9: Physical and chemical properties**9.2 Other information**

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No specific data. No specific data.
10.5 Incompatible materials	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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

Product/ingredient name	Result	Species	Dose	Exposure
MiracleHyb Hybridization Solution Lithium chloride	LD50 Dermal	Rabbit	1629 mg/kg	-
	LD50 Dermal	Rat	1488 mg/kg	-
	LD50 Oral	Rat	526 mg/kg	-
Heparin	LD50 Oral	Rat	1950 mg/kg	-
	LD50 Dermal	Rabbit	580 mg/kg	-
Sodium dodecyl sulphate	LD50 Dermal	Rabbit	580 mg/kg	-
	LD50 Oral	Rat	1288 mg/kg	-

Acute toxicity estimates

Route	ATE value
MiracleHyb Hybridization Solution Oral Dermal	11144.5 mg/kg 37700 mg/kg

Irritation/Corrosion

SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
MiracleHyb Hybridization Solution Lithium chloride Sodium dodecyl sulphate	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	250 Micrograms	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25 milligrams	-
	Skin - Moderate irritant	Mouse	-	24 hours 25 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
Skin - Moderate irritant	Rabbit	-	24 hours 25 milligrams	-	

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
MiracleHyb Hybridization Solution Sodium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

: MiracleHyb Probe Preparation Buffer Not available.
 MiracleHyb Hybridization Solution Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : MiracleHyb Probe Preparation Buffer No known significant effects or critical hazards.
 MiracleHyb Hybridization Solution No known significant effects or critical hazards.

Ingestion : MiracleHyb Probe Preparation Buffer No known significant effects or critical hazards.
 MiracleHyb Hybridization Solution No known significant effects or critical hazards.

Skin contact : MiracleHyb Probe Preparation Buffer No known significant effects or critical hazards.
 MiracleHyb Hybridization Solution No known significant effects or critical hazards.

Eye contact : MiracleHyb Probe Preparation Buffer No known significant effects or critical hazards.
 MiracleHyb Hybridization Solution No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

SECTION 11: Toxicological information

Inhalation	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No specific data. No specific data.
Ingestion	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No specific data. No specific data.
Skin contact	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No specific data. No specific data.
Eye contact	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No specific data. No specific data.

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

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Teratogenicity	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Developmental effects	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Fertility effects	: MiracleHyb Probe Preparation Buffer MiracleHyb Hybridization Solution	No known significant effects or critical hazards. No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
MiracleHyb Hybridization Solution Lithium chloride Sodium dodecyl sulphate	Acute LC50 22000 µg/l Fresh water	Fish - Gila elegans - Swim-up	96 hours
	Acute EC50 1200 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute LC50 900 µg/l Marine water	Crustaceans - Artemia salina - Adult	48 hours
	Acute LC50 1400 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 590 µg/l Fresh water	Fish - Cirrhinus mrigala - Larvae	96 hours
	Chronic NOEC 1.25 mg/l Marine water	Algae - Ulva fasciata - Zoea	96 hours
	Chronic NOEC 1 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	21 days
	Chronic NOEC 3.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
Chronic NOEC >1357 µg/l Fresh water	Fish - Pimephales promelas	42 days	

12.2 Persistence and degradability

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
MiracleHyb Hybridization Solution Lithium chloride Sodium dodecyl sulphate	- -	- -	Readily Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
MiracleHyb Hybridization Solution Sodium dodecyl sulphate	-2.03	-	low

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Date of issue/Date of revision : 19/10/2016

13/16

SECTION 13: Disposal considerations

Packaging

- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- Special precautions** : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulatory information

ADR/RID / IMDG / IATA : Not regulated.

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

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

SECTION 15: Regulatory information

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

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

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	MiracleHyb Probe Preparation Buffer	Not applicable.
	MiracleHyb Hybridization Solution	Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

SECTION 15: Regulatory information

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: Not determined.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Turkey	: Not determined.
United States	: Not determined.

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

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

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

Classification	Justification
MiracleHyb Hybridization Solution Eye Irrit. 2, H319	Calculation method

Full text of abbreviated H statements

MiracleHyb Hybridization Solution H228 H302 H311 H315 H319 H335 H400 H412	Flammable solid. Harmful if swallowed. Toxic in contact with skin. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Very toxic to aquatic life. Harmful to aquatic life with long lasting effects.
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Full text of classifications [CLP/GHS]

SECTION 16: Other information

MiracleHyb Hybridization Solution

Acute Tox. 3, H311
 Acute Tox. 4, H302
 Aquatic Acute 1, H400
 Aquatic Chronic 3, H412
 Eye Irrit. 2, H319
 Flam. Sol. 2, H228
 Skin Irrit. 2, H315
 STOT SE 3, H335

ACUTE TOXICITY (dermal) - Category 3
 ACUTE TOXICITY (oral) - Category 4
 ACUTE AQUATIC HAZARD - Category 1
 LONG-TERM AQUATIC HAZARD - Category 3
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
 FLAMMABLE SOLIDS - Category 2
 SKIN CORROSION/IRRITATION - Category 2
 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE
 (Respiratory tract irritation) - Category 3

Date of issue/ Date of revision : 19/10/2016

Date of previous issue : No previous validation.

Version : 1

Notice to reader

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