

SAFETY DATA SHEET



FMF MASTR v2

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

1.1 Product identifier

Product name : FMF MASTR v2
Part No. (Kit) : MR-0071.024
Part No. :
PCR Mix Plex 1 I-0837
PCR Mix Plex 2 I-0838
Taq DNA Polymerase I-0836
AR 2 I-1883

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

Identified uses	
Analytical reagent. For Research Use Only. Not for use in diagnostic procedures.	
PCR Mix Plex 1	0.080 ml
PCR Mix Plex 2	0.080 ml
Taq DNA Polymerase	0.009 ml
AR 2	1 ml

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Belgium
De Kleetlaan 5 bus 9
1831 Diegem
Belgium

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 :
PCR Mix Plex 1 Mixture
PCR Mix Plex 2 Mixture
Taq DNA Polymerase Mixture
AR 2 Mixture

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

Not classified.

Ingredients of unknown toxicity :
PCR Mix Plex 1 Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%
PCR Mix Plex 2 Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%
Taq DNA Polymerase Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%
AR 2 Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%

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

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SECTION 2: Hazards identification

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

2.2 Label elements

Signal word	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	No signal word. No signal word. No signal word. No signal word.
Hazard statements	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Precautionary statements

Prevention	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not applicable. Not applicable. Not applicable. Not applicable.
Response	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not applicable. Not applicable. Not applicable. Not applicable.
Storage	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not applicable. Not applicable. Not applicable. Not applicable.
Hazardous ingredients	: Taq DNA Polymerase	Not applicable.
Supplemental label elements	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not applicable. Not applicable. Not applicable. Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not applicable. Not applicable. Not applicable. Not applicable.

Special packaging requirements

Tactile warning of danger	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not applicable. Not applicable. Not applicable. Not applicable.
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2.3 Other hazards

Other hazards which do not result in classification	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	None known. None known. None known. None known.
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SECTION 3: Composition/information on ingredients

3.1 Substances : PCR Mix Plex 1 Mixture
 PCR Mix Plex 2 Mixture
 Taq DNA Polymerase Mixture
 AR 2 Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Taq DNA Polymerase	REACH #: Annex V	≥25 - ≤50	Not classified.	[2]
Glycerol	EC: 200-289-5			
	CAS: 56-81-5			
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	CAS: 9036-19-5	<1	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above.	[1] [5]

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
- [6] Additional disclosure due to company policy

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : PCR Mix Plex 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.

PCR Mix Plex 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.

Taq DNA Polymerase 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.

AR 2 Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : PCR Mix Plex 1 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.

PCR Mix Plex 2 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.

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

AR 2 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

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SECTION 4: First aid measures

		48 hours.
Skin contact	: PCR Mix Plex 1	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	PCR Mix Plex 2	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Taq DNA Polymerase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	AR 2	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: PCR Mix Plex 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.
	PCR Mix Plex 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.
	Taq DNA Polymerase	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.
	AR 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.
Protection of first-aiders	: PCR Mix Plex 1	No action shall be taken involving any personal risk or without suitable training.
	PCR Mix Plex 2	No action shall be taken involving any personal risk or without suitable training.
	Taq DNA Polymerase	No action shall be taken involving any personal risk or without suitable training.
	AR 2	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.
Inhalation	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.

SECTION 4: First aid measures

Skin contact	:	PCR Mix Plex 1	No known significant effects or critical hazards.
		PCR Mix Plex 2	No known significant effects or critical hazards.
		Taq DNA Polymerase	No known significant effects or critical hazards.
		AR 2	No known significant effects or critical hazards.
Ingestion	:	PCR Mix Plex 1	No known significant effects or critical hazards.
		PCR Mix Plex 2	No known significant effects or critical hazards.
		Taq DNA Polymerase	No known significant effects or critical hazards.
		AR 2	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	PCR Mix Plex 1	No specific data.
		PCR Mix Plex 2	No specific data.
		Taq DNA Polymerase	No specific data.
		AR 2	No specific data.
Inhalation	:	PCR Mix Plex 1	No specific data.
		PCR Mix Plex 2	No specific data.
		Taq DNA Polymerase	No specific data.
		AR 2	No specific data.
Skin contact	:	PCR Mix Plex 1	No specific data.
		PCR Mix Plex 2	No specific data.
		Taq DNA Polymerase	No specific data.
		AR 2	No specific data.
Ingestion	:	PCR Mix Plex 1	No specific data.
		PCR Mix Plex 2	No specific data.
		Taq DNA Polymerase	No specific data.
		AR 2	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	PCR Mix Plex 1	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.
		PCR Mix Plex 2	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.
		Taq DNA Polymerase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		AR 2	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.
Specific treatments	:	PCR Mix Plex 1	No specific treatment.
		PCR Mix Plex 2	No specific treatment.
		Taq DNA Polymerase	No specific treatment.
		AR 2	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	PCR Mix Plex 1	Use an extinguishing agent suitable for the surrounding fire.
		PCR Mix Plex 2	Use an extinguishing agent suitable for the surrounding fire.
		Taq DNA Polymerase	Use an extinguishing agent suitable for the surrounding fire.
		AR 2	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	PCR Mix Plex 1	None known.
		PCR Mix Plex 2	None known.
		Taq DNA Polymerase	None known.
		AR 2	None known.

5.2 Special hazards arising from the substance or mixture

SECTION 5: Firefighting measures

Hazards from the substance or mixture	: P _{CR} Mix Plex 1	In a fire or if heated, a pressure increase will occur and the container may burst.
	PCR Mix Plex 2	In a fire or if heated, a pressure increase will occur and the container may burst.
	Taq DNA Polymerase	In a fire or if heated, a pressure increase will occur and the container may burst.
	AR 2	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: P _{CR} Mix Plex 1	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	PCR Mix Plex 2	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	Taq DNA Polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	AR 2	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides

5.3 Advice for firefighters

Special precautions for fire-fighters	: P _{CR} Mix Plex 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.
	PCR Mix Plex 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.
	Taq DNA Polymerase	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.
	AR 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.
Special protective equipment for fire-fighters	: P _{CR} Mix Plex 1	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	PCR Mix Plex 2	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	Taq DNA Polymerase	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.
	AR 2	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for

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SECTION 5: Firefighting measures

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

: PCR Mix Plex 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.

PCR Mix Plex 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.

Taq DNA Polymerase

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.

AR 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.

For emergency responders

: PCR Mix Plex 1

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

PCR Mix Plex 2

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

Taq DNA Polymerase

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".

AR 2

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

6.2 Environmental precautions

: PCR Mix Plex 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).

PCR Mix Plex 2

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

Taq DNA Polymerase

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).

AR 2

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

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SECTION 6: Accidental release measures

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	: PCR Mix Plex 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.
	PCR Mix Plex 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.
	Taq DNA Polymerase	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.
	AR 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.

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	: PCR Mix Plex 1	Put on appropriate personal protective equipment (see Section 8).
	PCR Mix Plex 2	Put on appropriate personal protective equipment (see Section 8).
	Taq DNA Polymerase	Put on appropriate personal protective equipment (see Section 8).
	AR 2	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: PCR Mix Plex 1	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	PCR Mix Plex 2	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	Taq DNA Polymerase	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.
	AR 2	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

Storage	: PCR Mix Plex 1	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	PCR Mix Plex 2	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	Taq DNA Polymerase	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	AR 2	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not applicable. Not applicable. Not applicable. Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Taq DNA Polymerase Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist

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

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.

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SECTION 8: Exposure controls/personal protection

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	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Liquid. Liquid. Liquid. [Clear. / solution] Liquid.
Colour	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Colourless. Not available.
Odour	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Odour threshold	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
pH	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Melting point/freezing point	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Initial boiling point and boiling range	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Flash point	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Evaporation rate	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Flammability (solid, gas)	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not applicable. Not applicable. Not applicable. Not applicable.
Upper/lower flammability or explosive limits	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Vapour pressure	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.

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SECTION 9: Physical and chemical properties

Vapour density	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Relative density	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Solubility(ies)	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Partially soluble in the following materials: cold water and hot water. Partially soluble in the following materials: cold water and hot water. Not available. Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Auto-ignition temperature	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Decomposition temperature	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Viscosity	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Explosive properties	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.
Oxidising properties	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	Not available. Not available. Not available. Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: PCR Mix Plex 1 PCR Mix Plex 2 Taq DNA Polymerase AR 2	The product is stable. The product is stable. The product is stable. The product is stable.

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SECTION 10: Stability and reactivity

10.3 Possibility of hazardous reactions	: PCR Mix Plex 1	Under normal conditions of storage and use, hazardous reactions will not occur.
	PCR Mix Plex 2	Under normal conditions of storage and use, hazardous reactions will not occur.
	Taq DNA Polymerase	Under normal conditions of storage and use, hazardous reactions will not occur.
	AR 2	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: PCR Mix Plex 1	No specific data.
	PCR Mix Plex 2	No specific data.
	Taq DNA Polymerase	No specific data.
	AR 2	No specific data.
10.5 Incompatible materials	: PCR Mix Plex 1	May react or be incompatible with oxidising materials.
	PCR Mix Plex 2	May react or be incompatible with oxidising materials.
	Taq DNA Polymerase	May react or be incompatible with oxidising materials.
	AR 2	May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	: PCR Mix Plex 1	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	PCR Mix Plex 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Taq DNA Polymerase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	AR 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Taq DNA Polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	LD50 Oral	Rat	2800 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Taq DNA Polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	Eyes - Severe irritant	Rabbit	-	1 Percent	-

Sensitiser

Conclusion/Summary : Not available.

Information on likely routes of exposure : PCR Mix Plex 1 Not available.
PCR Mix Plex 2 Not available.
Taq DNA Polymerase Routes of entry anticipated: Oral, Dermal, Inhalation.
AR 2 Not available.

Potential acute health effects

Inhalation : PCR Mix Plex 1 No known significant effects or critical hazards.
PCR Mix Plex 2 No known significant effects or critical hazards.
Taq DNA Polymerase No known significant effects or critical hazards.
AR 2 No known significant effects or critical hazards.

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SECTION 11: Toxicological information

Ingestion	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.
Skin contact	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.
Eye contact	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	: PCR Mix Plex 1	No specific data.
	PCR Mix Plex 2	No specific data.
	Taq DNA Polymerase	No specific data.
	AR 2	No specific data.
Ingestion	: PCR Mix Plex 1	No specific data.
	PCR Mix Plex 2	No specific data.
	Taq DNA Polymerase	No specific data.
	AR 2	No specific data.
Skin contact	: PCR Mix Plex 1	No specific data.
	PCR Mix Plex 2	No specific data.
	Taq DNA Polymerase	No specific data.
	AR 2	No specific data.
Eye contact	: PCR Mix Plex 1	No specific data.
	PCR Mix Plex 2	No specific data.
	Taq DNA Polymerase	No specific data.
	AR 2	No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.
Carcinogenicity	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.
Mutagenicity	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.

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Teratogenicity	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.
Developmental effects	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.
Fertility effects	: PCR Mix Plex 1	No known significant effects or critical hazards.
	PCR Mix Plex 2	No known significant effects or critical hazards.
	Taq DNA Polymerase	No known significant effects or critical hazards.
	AR 2	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Taq DNA Polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	Acute EC50 210 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 10800 µg/l Marine water	Crustaceans - Pandalus montagui - Adult	48 hours
	Acute LC50 8600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 7200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Taq DNA Polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	3.77	78.67	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.

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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.

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

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

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
Taq DNA Polymerase Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles :
 PCR Mix Plex 1 : Not applicable.
 PCR Mix Plex 2 : Not applicable.
 Taq DNA Polymerase : Not applicable.
 AR 2 : Not applicable.

Other EU regulations

Ozone depleting substances (1005/2009/EU)

Not listed.

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

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SECTION 15: Regulatory information

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.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: Not determined.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: 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
Not classified.	

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SECTION 16: Other information

Taq DNA Polymerase

H315
H318
H411

Causes skin irritation.
Causes serious eye damage.
Toxic to aquatic life with long lasting effects.

[Full text of classifications \[CLP/GHS\]](#)

Taq DNA Polymerase

Aquatic Chronic 2, H411
Eye Dam. 1, H318
Skin Irrit. 2, H315

LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
SKIN CORROSION/IRRITATION - Category 2

Date of issue/ Date of revision : 17/01/2018

Date of previous issue : 30/08/2017.

Version : 2

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