Conforms to HPR 2015

SAFETY DATA SHEET

Agilent Technologies

Brilliant III Ultra-Fast QRT-PCR Master Mix, Part Number 600884

Section 1. Identification

Product identifier : Brilliant III Ultra-Fast QRT-PCR Master Mix, Part Number 600884

Part no. (chemical kit) : 600884

Part no. :

2X Brilliant III QRT-PCR Master Mix	600884-51
RT/RNase Block	600884-52
Reference Dye	600530-53
100 mM DTT	600089-53

Material uses : Analytical reagent.

2X Brilliant III QRT-PCR Master Mix	2 x 2 ml
RT/RNase Block	0.4 ml
Reference Dye	0.1 ml (100 µl 1 mM)
100 mM DTT	0.1 ml

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

Emergency telephone number (with hours of operation) : CHEMTREC®: 1-800-424-9300

Section 2. Hazard identification

Classification of the substance or mixture

2X Brilliant III QRT-PCR Master Mix
H320 EYE IRRITATION - Category 2B

RT/RNase Block
H320 EYE IRRITATION - Category 2B

GHS label elements

Signal word :

2X Brilliant III QRT-PCR Master Mix	Warning
RT/RNase Block	Warning
Reference Dye	No signal word.
100 mM DTT	No signal word.

Hazard statements :

2X Brilliant III QRT-PCR Master Mix	H320 - Causes eye irritation.
RT/RNase Block	H320 - Causes eye irritation.
Reference Dye	No known significant effects or critical hazards.
100 mM DTT	No known significant effects or critical hazards.

Precautionary statements

Prevention :

2X Brilliant III QRT-PCR Master Mix	Not applicable.
RT/RNase Block	Not applicable.
Reference Dye	Not applicable.
100 mM DTT	Not applicable.

Section 2. Hazard identification

Response	:	2X Brilliant III QRT-PCR Master Mix	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
		RT/RNase Block	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
		Reference Dye	Not applicable.
		100 mM DTT	Not applicable.
Storage	:	2X Brilliant III QRT-PCR Master Mix	Not applicable.
		RT/RNase Block	Not applicable.
		Reference Dye	Not applicable.
		100 mM DTT	Not applicable.
Disposal	:	2X Brilliant III QRT-PCR Master Mix	Not applicable.
		RT/RNase Block	Not applicable.
		Reference Dye	Not applicable.
		100 mM DTT	Not applicable.
Supplemental label elements	:	2X Brilliant III QRT-PCR Master Mix	None known.
		RT/RNase Block	None known.
		Reference Dye	None known.
		100 mM DTT	None known.
Other hazards which do not result in classification	:	2X Brilliant III QRT-PCR Master Mix	None known.
		RT/RNase Block	None known.
		Reference Dye	None known.
		100 mM DTT	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	2X Brilliant III QRT-PCR Master Mix	Mixture
		RT/RNase Block	Mixture
		Reference Dye	Mixture
		100 mM DTT	Mixture

Ingredient name	% (w/w)	CAS number
2X Brilliant III QRT-PCR Master Mix		
Glycerol	7 - 13	56-81-5
Polyethylene glycol	5 - 10	25322-68-3
Potassium chloride	1 - 5	7447-40-7
Magnesium chloride	<0.1	7786-30-3
RT/RNase Block		
Glycerol	30 - 60	56-81-5
Reference Dye		
Potassium chloride	1 - 5	7447-40-7
100 mM DTT		
(R*,R*)-1,4-Dimercaptobutane-2,3-diol	0.5 - 1.5	3483-12-3

Section 3. Composition/information on ingredients

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.

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

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact	:	2X Brilliant III QRT-PCR Master Mix	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. If irritation persists, get medical attention.
		RT/RNase Block	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. If irritation persists, get medical attention.
		Reference Dye	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.
		100 mM DTT	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	:	2X Brilliant III QRT-PCR Master Mix	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. 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.
		RT/RNase Block	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. 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.
		Reference Dye	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.
		100 mM DTT	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Section 4. First-aid measures

Skin contact	:	2X Brilliant III QRT-PCR Master Mix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		RT/RNase Block	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		Reference Dye	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		100 mM DTT	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:	2X Brilliant III QRT-PCR Master Mix	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. 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.
		RT/RNase Block	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. 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.
		Reference Dye	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		100 mM DTT	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Section 4. First-aid measures

Eye contact	:	2X Brilliant III QRT-PCR Master Mix	Causes eye irritation.
		RT/RNase Block	Causes eye irritation.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
Inhalation	:	2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
		RT/RNase Block	No known significant effects or critical hazards.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
Skin contact	:	2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
		RT/RNase Block	No known significant effects or critical hazards.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
Ingestion	:	2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
		RT/RNase Block	No known significant effects or critical hazards.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	2X Brilliant III QRT-PCR Master Mix	Adverse symptoms may include the following: irritation watering redness
		RT/RNase Block	Adverse symptoms may include the following: irritation watering redness
		Reference Dye	No specific data.
		100 mM DTT	No specific data.
Inhalation	:	2X Brilliant III QRT-PCR Master Mix	No specific data.
		RT/RNase Block	No specific data.
		Reference Dye	No specific data.
		100 mM DTT	No specific data.
Skin contact	:	2X Brilliant III QRT-PCR Master Mix	No specific data.
		RT/RNase Block	No specific data.
		Reference Dye	No specific data.
		100 mM DTT	No specific data.
Ingestion	:	2X Brilliant III QRT-PCR Master Mix	No specific data.
		RT/RNase Block	No specific data.
		Reference Dye	No specific data.
		100 mM DTT	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	:	2X Brilliant III QRT-PCR Master Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		RT/RNase Block	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Reference Dye	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed

Section 4. First-aid measures

			person may need to be kept under medical surveillance for 48 hours.
		100 mM DTT	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	:	2X Brilliant III QRT-PCR Master Mix	No specific treatment.
		RT/RNase Block	No specific treatment.
		Reference Dye	No specific treatment.
		100 mM DTT	No specific treatment.
Protection of first-aiders	:	2X Brilliant III QRT-PCR Master Mix	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
		RT/RNase Block	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
		Reference Dye	No action shall be taken involving any personal risk or without suitable training.
		100 mM DTT	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	2X Brilliant III QRT-PCR Master Mix	Use an extinguishing agent suitable for the surrounding fire.
		RT/RNase Block	Use an extinguishing agent suitable for the surrounding fire.
		Reference Dye	Use an extinguishing agent suitable for the surrounding fire.
		100 mM DTT	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	2X Brilliant III QRT-PCR Master Mix	None known.
		RT/RNase Block	None known.
		Reference Dye	None known.
		100 mM DTT	None known.
Specific hazards arising from the chemical	:	2X Brilliant III QRT-PCR Master Mix	In a fire or if heated, a pressure increase will occur and the container may burst.
		RT/RNase Block	In a fire or if heated, a pressure increase will occur and the container may burst.
		Reference Dye	In a fire or if heated, a pressure increase will occur and the container may burst.
		100 mM DTT	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	:	2X Brilliant III QRT-PCR Master Mix	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
		RT/RNase Block	Decomposition products may include the following materials:

Section 5. Fire-fighting measures

		carbon dioxide carbon monoxide
	Reference Dye	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
	100 mM DTT	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
Special protective actions for fire-fighters :	2X Brilliant III QRT-PCR Master Mix	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.
	RT/RNase Block	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.
	Reference Dye	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.
	100 mM DTT	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 :	2X Brilliant III QRT-PCR Master Mix	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	RT/RNase Block	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Reference Dye	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	100 mM DTT	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel :	2X Brilliant III QRT-PCR Master Mix	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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

	RT/RNase Block	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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	Reference Dye	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.
	100 mM DTT	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 :	2X Brilliant III QRT-PCR Master Mix	If specialized 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".
	RT/RNase Block	If specialized 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".
	Reference Dye	If specialized 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".
	100 mM DTT	If specialized 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".
Environmental precautions :	2X Brilliant III QRT-PCR Master Mix	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).
	RT/RNase Block	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).
	Reference Dye	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).
	100 mM DTT	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).

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

Methods for cleaning up	:	2X Brilliant III QRT-PCR Master Mix	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.
		RT/RNase Block	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.
		Reference Dye	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.
		100 mM DTT	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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	2X Brilliant III QRT-PCR Master Mix	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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.
		RT/RNase Block	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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.
		Reference Dye	Put on appropriate personal protective equipment (see Section 8).
		100 mM DTT	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	:	2X Brilliant III QRT-PCR Master Mix	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.
		RT/RNase Block	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

Section 7. Handling and storage

		before entering eating areas. See also Section 8 for additional information on hygiene measures.
	Reference Dye	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.
	100 mM DTT	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.
Conditions for safe storage, including any incompatibilities :	2X Brilliant III QRT-PCR Master Mix	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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	RT/RNase Block	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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	Reference Dye	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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	100 mM DTT	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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for

Section 7. Handling and storage

incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2X Brilliant III QRT-PCR Master Mix	
Glycerol	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 10 mg/m³ 8 hours. Form: Mist **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 10 mg/m³ 8 hours. Form: mist **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 20 mg/m³ 15 minutes. Form: mist TWA: 10 mg/m³ 8 hours. Form: mist **CA British Columbia Provincial (Canada, 1/2021).** TWA: 3 mg/m³ 8 hours. Form: respirable mist TWA: 10 mg/m³ 8 hours. Form: total mist
Polyethylene glycol	**OARS WEEL (United States, 1/2021).** TWA: 10 mg/m³ 8 hours.
RT/RNase Block	
Glycerol	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 10 mg/m³ 8 hours. Form: Mist **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 10 mg/m³ 8 hours. Form: mist **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 20 mg/m³ 15 minutes. Form: mist TWA: 10 mg/m³ 8 hours. Form: mist **CA British Columbia Provincial (Canada, 1/2021).** TWA: 3 mg/m³ 8 hours. Form: respirable mist TWA: 10 mg/m³ 8 hours. Form: total mist

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

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.

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.

Section 8. Exposure controls/personal protection

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

Skin protection

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

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

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

Respiratory protection : 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.

Section 9. Physical and chemical properties and safety characteristics

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

Appearance

Physical state	:	2X Brilliant III QRT-PCR Master Mix	Liquid.
		RT/RNase Block	Liquid.
		Reference Dye	Liquid.
		100 mM DTT	Liquid.
Color	:	2X Brilliant III QRT-PCR Master Mix	Not available.
		RT/RNase Block	Not available.
		Reference Dye	Not available.
		100 mM DTT	Not available.
Odor	:	2X Brilliant III QRT-PCR Master Mix	Not available.
		RT/RNase Block	Not available.
		Reference Dye	Not available.
		100 mM DTT	Not available.
Odor threshold	:	2X Brilliant III QRT-PCR Master Mix	Not available.
		RT/RNase Block	Not available.
		Reference Dye	Not available.
		100 mM DTT	Not available.
pH	:	2X Brilliant III QRT-PCR Master Mix	7.8
		RT/RNase Block	8
		Reference Dye	8
		100 mM DTT	Not available.

Section 9. Physical and chemical properties and safety characteristics

Melting point/freezing point :

2X Brilliant III QRT-PCR Master Mix	Not available.
RT/RNase Block	Not available.
Reference Dye	Not available.
100 mM DTT	0°C (32°F)

Boiling point, initial boiling point, and boiling range :

2X Brilliant III QRT-PCR Master Mix	Not available.
RT/RNase Block	Not available.
Reference Dye	Not available.
100 mM DTT	100°C (212°F)

Flash point :

	Closed cup			Open cup		
Ingredient name	**°C**	**°F**	**Method**	**°C**	**°F**	**Method**
2X Brilliant III QRT-PCR Master Mix						
Edetic acid	>100	>212	DIN 51758			
Polyoxyethylene octyl phenyl ether	>109.85	>229.7				
RT/RNase Block						
Edetic acid	>100	>212	DIN 51758			
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	>109.85	>229.7				
100 mM DTT						
(R*,R*) -1,4-Dimercaptobutane-2,3-diol	>110	>230				

Evaporation rate :

2X Brilliant III QRT-PCR Master Mix	Not available.
RT/RNase Block	Not available.
Reference Dye	Not available.
100 mM DTT	Not available.

Flammability :

2X Brilliant III QRT-PCR Master Mix	Not applicable.
RT/RNase Block	Not applicable.
Reference Dye	Not applicable.
100 mM DTT	Not applicable.

Lower and upper explosion limit/flammability limit :

2X Brilliant III QRT-PCR Master Mix	Not available.
RT/RNase Block	Not available.
Reference Dye	Not available.
100 mM DTT	Not available.

Vapor pressure :

	Vapor Pressure at 20˚C			Vapor pressure at 50˚C		
Ingredient name	**mm Hg**	**kPa**	**Method**	**mm Hg**	**kPa**	**Method**

Section 9. Physical and chemical properties and safety characteristics

2X Brilliant III QRT-PCR Master Mix					
water	23.8	3.2		92.258	12.3
Sorbitan monolaurate, ethoxylated	<1	<0.13			
RT/RNase Block					
water	23.8	3.2		92.258	12.3
Glycerol	0.000075	0.00001		0.0025	0.00033
Reference Dye					
water	23.8	3.2		92.258	12.3
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	0.000027	0.0000036		0.000007501	0.000001
100 mM DTT					
water	23.8	3.2		92.258	12.3

Relative vapor density : 2X Brilliant III QRT-PCR Master Mix — Not available.
RT/RNase Block — Not available.
Reference Dye — Not available.
100 mM DTT — Not available.

Relative density : 2X Brilliant III QRT-PCR Master Mix — Not available.
RT/RNase Block — Not available.
Reference Dye — Not available.
100 mM DTT — Not available.

Solubility : 2X Brilliant III QRT-PCR Master Mix — Easily soluble in the following materials: cold water and hot water.
RT/RNase Block — Easily soluble in the following materials: cold water and hot water.
Reference Dye — Easily soluble in the following materials: cold water and hot water.
100 mM DTT — Easily soluble in the following materials: cold water and hot water.

Partition coefficient: n-octanol/water : 2X Brilliant III QRT-PCR Master Mix — Not applicable.
RT/RNase Block — Not applicable.
Reference Dye — Not applicable.
100 mM DTT — Not applicable.

Auto-ignition temperature :

Ingredient name	°C	°F	Method
2X Brilliant III QRT-PCR Master Mix			
Polyethylene glycol	360	680	
Glycerol	370	698	
RT/RNase Block			
Glycerol	370	698	
Edetic acid	>400	>752	VDI 2263

Section 9. Physical and chemical properties and safety characteristics

Decomposition temperature	:	2X Brilliant III QRT-PCR Master Mix	Not available.
		RT/RNase Block	Not available.
		Reference Dye	Not available.
		100 mM DTT	Not available.
Viscosity	:	2X Brilliant III QRT-PCR Master Mix	Not available.
		RT/RNase Block	Not available.
		Reference Dye	Not available.
		100 mM DTT	Not available.
Particle characteristics			
Median particle size	:	2X Brilliant III QRT-PCR Master Mix	Not applicable.
		RT/RNase Block	Not applicable.
		Reference Dye	Not applicable.
		100 mM DTT	Not applicable.

Section 10. Stability and reactivity

Reactivity	:	2X Brilliant III QRT-PCR Master Mix	No specific test data related to reactivity available for this product or its ingredients.
		RT/RNase Block	No specific test data related to reactivity available for this product or its ingredients.
		Reference Dye	No specific test data related to reactivity available for this product or its ingredients.
		100 mM DTT	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	2X Brilliant III QRT-PCR Master Mix	The product is stable.
		RT/RNase Block	The product is stable.
		Reference Dye	The product is stable.
		100 mM DTT	The product is stable.
Possibility of hazardous reactions	:	2X Brilliant III QRT-PCR Master Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
		RT/RNase Block	Under normal conditions of storage and use, hazardous reactions will not occur.
		Reference Dye	Under normal conditions of storage and use, hazardous reactions will not occur.
		100 mM DTT	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	2X Brilliant III QRT-PCR Master Mix	No specific data.
		RT/RNase Block	No specific data.
		Reference Dye	No specific data.
		100 mM DTT	No specific data.
Incompatible materials	:	2X Brilliant III QRT-PCR Master Mix	May react or be incompatible with oxidizing materials.
		RT/RNase Block	May react or be incompatible with oxidizing materials.
		Reference Dye	May react or be incompatible with oxidizing materials.
		100 mM DTT	May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity

Hazardous decomposition products	:	2X Brilliant III QRT-PCR Master Mix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		RT/RNase Block	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Reference Dye	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		100 mM DTT	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2X Brilliant III QRT-PCR Master Mix				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
Magnesium chloride	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat	2800 mg/kg	-
RT/RNase Block				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Reference Dye				
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2X Brilliant III QRT-PCR Master Mix					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Polyethylene glycol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Mild irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
RT/RNase Block					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Reference Dye					
Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-

Section 11. Toxicological information

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
100 mM DTT (R*,R*)-1,4-Dimercaptobutane-2,3-diol	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure	:	2X Brilliant III QRT-PCR Master Mix	Routes of entry anticipated: Oral, Dermal, Inhalation.
		RT/RNase Block	Routes of entry anticipated: Oral, Dermal, Inhalation.
		Reference Dye	Not available.
		100 mM DTT	Routes of entry anticipated: Oral, Dermal, Inhalation.
Potential acute health effects			
Eye contact	:	2X Brilliant III QRT-PCR Master Mix	Causes eye irritation.
		RT/RNase Block	Causes eye irritation.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
Inhalation	:	2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
		RT/RNase Block	No known significant effects or critical hazards.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
Skin contact	:	2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
		RT/RNase Block	No known significant effects or critical hazards.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
Ingestion	:	2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
		RT/RNase Block	No known significant effects or critical hazards.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact	:	2X Brilliant III QRT-PCR Master Mix	Adverse symptoms may include the following: irritation watering redness
		RT/RNase Block	Adverse symptoms may include the following: irritation watering redness
		Reference Dye	No specific data.
		100 mM DTT	No specific data.
Inhalation	:	2X Brilliant III QRT-PCR Master Mix	No specific data.
		RT/RNase Block	No specific data.
		Reference Dye	No specific data.
		100 mM DTT	No specific data.
Skin contact	:	2X Brilliant III QRT-PCR Master Mix	No specific data.
		RT/RNase Block	No specific data.
		Reference Dye	No specific data.
		100 mM DTT	No specific data.
Ingestion	:	2X Brilliant III QRT-PCR Master Mix	No specific data.
		RT/RNase Block	No specific data.
		Reference Dye	No specific data.
		100 mM DTT	No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	:	2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
		RT/RNase Block	No known significant effects or critical hazards.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
Carcinogenicity	:	2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
		RT/RNase Block	No known significant effects or critical hazards.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
Mutagenicity	:	2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
		RT/RNase Block	No known significant effects or critical hazards.
		Reference Dye	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.

Section 11. Toxicological information

Reproductive toxicity :

2X Brilliant III QRT-PCR Master Mix	No known significant effects or critical hazards.
RT/RNase Block	No known significant effects or critical hazards.
Reference Dye	No known significant effects or critical hazards.
100 mM DTT	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
2X Brilliant III QRT-PCR Master Mix					
2X Brilliant III QRT-PCR Master Mix	193152.7	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Polyethylene glycol	28000	N/A	N/A	N/A	N/A
Potassium chloride	2600	N/A	N/A	N/A	N/A
Magnesium chloride	2800	2500	N/A	N/A	N/A
RT/RNase Block					
Glycerol	12600	N/A	N/A	N/A	N/A
Reference Dye					
Reference Dye	70270.3	N/A	N/A	N/A	N/A
Potassium chloride	2600	N/A	N/A	N/A	N/A
100 mM DTT					
100 mM DTT	33333.3	N/A	N/A	N/A	N/A
(R*,R*)-1,4-Dimercaptobutane-2,3-diol	500	N/A	N/A	N/A	N/A

Other information :

2X Brilliant III QRT-PCR Master Mix	Not available.
RT/RNase Block	Not available.
Reference Dye	Not available.
100 mM DTT	Adverse symptoms may include the following: May cause sensitization by skin contact.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2X Brilliant III QRT-PCR Master Mix			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Polyethylene glycol	Acute LC50 >1000000 µg/l Fresh water	Fish - Salmo salar - Parr	96 hours
Potassium chloride	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 83000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.68 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
	Acute LC50 509.65 mg/l Fresh water	Fish - Danio rerio	96 hours
Magnesium chloride	Acute EC50 >100 mg/l Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 180000 µg/l Fresh water	Crustaceans - Eudiaptomus padanus ssp. padanus - Adult	48 hours

Section 12. Ecological information

	Acute IC50 6.8 mg/l Fresh water	Aquatic plants - Lemna aequinoctialis	96 hours
	Acute LC50 32000 µg/l Fresh water	Daphnia - Daphnia hyalina - Adult	48 hours
	Acute LC50 2120 mg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute NOEC 100 mg/l Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Chronic NOEC 0.1 mg/l Fresh water	Fish - Cyprinus carpio	35 days
RT/RNase Block			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Reference Dye			
Potassium chloride	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 83000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.68 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
	Acute LC50 509.65 mg/l Fresh water	Fish - Danio rerio	96 hours
100 mM DTT			
(R*,R*) -1,4-Dimercaptobutane-2,3-diol	Acute LC50 27000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2X Brilliant III QRT-PCR Master Mix				
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
Polyethylene glycol	OECD 301D Ready Biodegradability - Closed Bottle Test	74.85 % - Readily - 28 days	4 mg/l	-
RT/RNase Block				
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2X Brilliant III QRT-PCR Master Mix			
Polyethylene glycol	-	-	Readily
Potassium chloride	-	-	Readily
Reference Dye			
Potassium chloride	-	-	Readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
2X Brilliant III QRT-PCR Master Mix			
Glycerol	-1.76	-	low
Polyethylene glycol	-	3.2	low
Potassium chloride	-0.46	-	low
RT/RNase Block			
Glycerol	-1.76	-	low
Reference Dye			
Potassium chloride	-0.46	-	low

Mobility in soil

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

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

TDG / IMDG / IATA : Not regulated.

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.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Section 15. Regulatory information

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	:	All components are listed or exempted.
Europe	:	Not determined.
Japan	:	**Japan inventory (CSCL)**: Not determined. **Japan inventory (ISHL)**: 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.

Section 16. Other information

History

Date of issue/Date of revision	:	05/27/2022
Date of previous issue	:	09/17/2019
Version	:	8
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals HPR = Hazardous Products Regulations IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available UN = United Nations

Procedure used to derive the classification

Classification	Justification
2X Brilliant III QRT-PCR Master Mix EYE IRRITATION - Category 2B	Calculation method
RT/RNase Block EYE IRRITATION - Category 2B	Calculation method

Section 16. Other information

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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