

SAFETY DATA SHEET



Agilent High Sensitivity DNA Reagents, Part Number 5067-4627

Section 1. Identification

Product identifier	: Agilent High Sensitivity DNA Reagents, Part Number 5067-4627		
Part No. (Chemical Kit)	: 5067-4627		
Part No.	: High Sensitivity DNA Reagent Kit I	G2938-85004	
	High Sensitivity DNA Markers	Not available.	
	High Sensitivity DNA Gel Matrix	Not available.	
	High Sensitivity DNA Dye	Not available.	
	High Sensitivity DNA Ladder	Not available.	

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

Analytical chemistry.

High Sensitivity DNA Markers	4 x 200 µl
High Sensitivity DNA Gel Matrix	2 x 300 µl
High Sensitivity DNA Dye	1 x 40 µl
High Sensitivity DNA Ladder	1 x 20 µl

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Emergency telephone number (with hours of operation) : CHEMTREC®: +(61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

High Sensitivity DNA Dye
H227

FLAMMABLE LIQUIDS - Category 4

High Sensitivity DNA Gel Matrix	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 10 - 30%
	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%
	Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
High Sensitivity DNA Gel Matrix	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 6.5%

GHS label elements

Signal word	: High Sensitivity DNA Markers	No signal word.
	High Sensitivity DNA Gel Matrix	No signal word.
	High Sensitivity DNA Dye	WARNING
	High Sensitivity DNA Ladder	No signal word.

Hazard statements	: High Sensitivity DNA Markers	No known significant effects or critical hazards.
	High Sensitivity DNA Gel Matrix	No known significant effects or critical hazards.
	High Sensitivity DNA Dye	H227 - Combustible liquid.
	High Sensitivity DNA Ladder	No known significant effects or critical hazards.

Precautionary statements

Section 2. Hazard(s) identification

Prevention	:	High Sensitivity DNA Markers	Not applicable.
		High Sensitivity DNA Gel Matrix	Not applicable.
		High Sensitivity DNA Dye	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from flames and hot surfaces. - No smoking.
Response	:	High Sensitivity DNA Ladder	Not applicable.
		High Sensitivity DNA Markers	Not applicable.
		High Sensitivity DNA Gel Matrix	Not applicable.
		High Sensitivity DNA Dye	Not applicable.
		High Sensitivity DNA Ladder	Not applicable.
Storage	:	High Sensitivity DNA Markers	Not applicable.
		High Sensitivity DNA Gel Matrix	Not applicable.
		High Sensitivity DNA Dye	P403 - Store in a well-ventilated place. P235 - Keep cool.
		High Sensitivity DNA Ladder	Not applicable.
Disposal	:	High Sensitivity DNA Markers	Not applicable.
		High Sensitivity DNA Gel Matrix	Not applicable.
		High Sensitivity DNA Dye	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		High Sensitivity DNA Ladder	Not applicable.
Supplemental label elements			
Additional warning phrases	:	High Sensitivity DNA Markers	Not applicable.
		High Sensitivity DNA Gel Matrix	Not applicable.
		High Sensitivity DNA Dye	Not applicable.
		High Sensitivity DNA Ladder	Not applicable.
Other hazards which do not result in classification	:	High Sensitivity DNA Markers	None known.
		High Sensitivity DNA Gel Matrix	None known.
		High Sensitivity DNA Dye	None known.
		High Sensitivity DNA Ladder	None known.

Section 3. Composition and ingredient information

Substance/mixture	:	High Sensitivity DNA Markers	Mixture
		High Sensitivity DNA Gel Matrix	Mixture
		High Sensitivity DNA Dye	Mixture
		High Sensitivity DNA Ladder	Mixture

CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
High Sensitivity DNA Dye Dimethyl sulfoxide	≥90	67-68-5

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	: High Sensitivity DNA Markers	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.
	High Sensitivity DNA Gel Matrix	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.
	High Sensitivity DNA Dye	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
	High Sensitivity DNA Ladder	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	: High Sensitivity DNA Markers	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	High Sensitivity DNA Gel Matrix	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.
	High Sensitivity DNA Dye	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.
	High Sensitivity DNA Ladder	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: High Sensitivity DNA Markers	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	High Sensitivity DNA Gel Matrix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	High Sensitivity DNA Dye	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.
	High Sensitivity DNA Ladder	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: High Sensitivity DNA Markers	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.
	High Sensitivity DNA Gel	Wash out mouth with water. Remove victim to fresh

Section 4. First aid measures

Matrix	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.
High Sensitivity DNA Dye	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention 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.
High Sensitivity DNA Ladder	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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	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.
Inhalation	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	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.
Skin contact	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	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.
Ingestion	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	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.

Over-exposure signs/symptoms

Eye contact	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	No specific data. No specific data. No specific data. No specific data.
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Section 4. First aid measures

Inhalation	: High Sensitivity DNA Markers	No specific data.
	High Sensitivity DNA Gel Matrix	No specific data.
	High Sensitivity DNA Dye	No specific data.
	High Sensitivity DNA Ladder	No specific data.
Skin contact	: High Sensitivity DNA Markers	No specific data.
	High Sensitivity DNA Gel Matrix	No specific data.
	High Sensitivity DNA Dye	No specific data.
	High Sensitivity DNA Ladder	No specific data.
Ingestion	: High Sensitivity DNA Markers	No specific data.
	High Sensitivity DNA Gel Matrix	No specific data.
	High Sensitivity DNA Dye	No specific data.
	High Sensitivity DNA Ladder	No specific data.

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

Notes to physician	: High Sensitivity DNA Markers	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	High Sensitivity DNA Gel Matrix	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.
	High Sensitivity DNA Dye	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	High Sensitivity DNA Ladder	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: High Sensitivity DNA Markers	No specific treatment.
	High Sensitivity DNA Gel Matrix	No specific treatment.
	High Sensitivity DNA Dye	No specific treatment.
	High Sensitivity DNA Ladder	No specific treatment.
Protection of first-aiders	: High Sensitivity DNA Markers	No action shall be taken involving any personal risk or without suitable training.
	High Sensitivity DNA Gel Matrix	No action shall be taken involving any personal risk or without suitable training.
	High Sensitivity DNA Dye	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.
	High Sensitivity DNA Ladder	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media	: High Sensitivity DNA Markers	Use an extinguishing agent suitable for the surrounding fire.
	High Sensitivity DNA Gel Matrix	Use an extinguishing agent suitable for the surrounding fire.
	High Sensitivity DNA Dye	Use dry chemical, CO ₂ , water spray (fog) or foam.
	High Sensitivity DNA Ladder	Use an extinguishing agent suitable for the surrounding fire.

Section 5. Firefighting measures

Unsuitable extinguishing media	: High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	None known. None known. Do not use water jet. None known.
Specific hazards arising from the chemical	: High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides No specific data.
Special protective actions for fire-fighters	: High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	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. 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. 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. 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	: High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus

Section 5. Firefighting measures

High Sensitivity DNA Ladder	(SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
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Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: High Sensitivity DNA Markers	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.
	High Sensitivity DNA Gel Matrix	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.
	High Sensitivity DNA 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	High Sensitivity DNA Ladder	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	: High Sensitivity DNA Markers	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".
	High Sensitivity DNA Gel Matrix	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".
	High Sensitivity DNA Dye	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".
	High Sensitivity DNA Ladder	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".
Environmental precautions	: High Sensitivity DNA Markers	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).
	High Sensitivity DNA Gel Matrix	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has

Section 6. Accidental release measures

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

Methods and material for containment and cleaning up

Methods for cleaning up	:	High Sensitivity DNA Markers	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.
		High Sensitivity DNA Gel Matrix	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.
		High Sensitivity DNA Dye	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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.
		High Sensitivity DNA Ladder	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	:	High Sensitivity DNA Markers	Put on appropriate personal protective equipment (see Section 8).
		High Sensitivity DNA Gel Matrix	Put on appropriate personal protective equipment (see Section 8).
		High Sensitivity DNA Dye	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.
		High Sensitivity DNA Ladder	Put on appropriate personal protective equipment

Section 7. Handling and storage

(see Section 8).

Advice on general occupational hygiene

High Sensitivity DNA Markers	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.
High Sensitivity DNA Gel Matrix	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.
High Sensitivity DNA 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.
High Sensitivity DNA Ladder	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

High Sensitivity DNA Markers	Storage temperature: 4°C (39.2°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
High Sensitivity DNA Gel Matrix	Storage temperature: 4°C (39.2°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
High Sensitivity DNA Dye	Storage temperature: 4°C (39.2°F). Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been

Section 7. Handling and storage

High Sensitivity DNA Ladder

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.

Storage temperature: 4°C (39.2°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
High Sensitivity DNA Dye Dimethyl sulfoxide	DFG MAC-values list (Germany, 7/2015). Absorbed through skin. PEAK: 320 mg/m ³ , 4 times per shift, 15 minutes. TWA: 160 mg/m ³ 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. TWA: 50 ppm 8 hours.

- 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.
- 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.

Section 8. Exposure controls and personal protection

- 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

Appearance

- Physical state** : High Sensitivity DNA Markers Liquid.
High Sensitivity DNA Gel Liquid.
Matrix
- Colour** : High Sensitivity DNA Markers Not available.
High Sensitivity DNA Gel Not available.
Matrix
High Sensitivity DNA Dye Not available.
High Sensitivity DNA Ladder Not available.
- Odour** : High Sensitivity DNA Markers Odourless.
High Sensitivity DNA Gel Odourless.
Matrix
High Sensitivity DNA Dye Slight
High Sensitivity DNA Ladder Not available.
- Odour threshold** : High Sensitivity DNA Markers Not available.
High Sensitivity DNA Gel Not available.
Matrix
High Sensitivity DNA Dye Not available.
High Sensitivity DNA Ladder Not available.
- pH** : High Sensitivity DNA Markers 6.5 to 8
High Sensitivity DNA Gel Not available.
Matrix
High Sensitivity DNA Dye Not available.
High Sensitivity DNA Ladder Not available.
- Melting point** : High Sensitivity DNA Markers 0°C (32°F)
High Sensitivity DNA Gel Not available.
Matrix
High Sensitivity DNA Dye 18.4°C (65.1°F)
High Sensitivity DNA Ladder 0°C (32°F)
- Boiling point** : High Sensitivity DNA Markers 100°C (212°F)
High Sensitivity DNA Gel Not available.
Matrix
High Sensitivity DNA Dye 189°C (372.2°F)
High Sensitivity DNA Ladder 100°C (212°F)
- Flash point** : High Sensitivity DNA Markers Not available.
High Sensitivity DNA Gel Not available.
Matrix
High Sensitivity DNA Dye Closed cup: 89°C (192.2°F)
High Sensitivity DNA Ladder Not available.
- Evaporation rate** : High Sensitivity DNA Markers Not available.
High Sensitivity DNA Gel Not available.
Matrix
High Sensitivity DNA Dye Not available.
High Sensitivity DNA Ladder Not available.
- Flammability (solid, gas)** : High Sensitivity DNA Markers Not applicable.
High Sensitivity DNA Gel Not applicable.
Matrix
High Sensitivity DNA Dye Not applicable.
High Sensitivity DNA Ladder Not applicable.

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits	: High Sensitivity DNA Markers	Not available.
	High Sensitivity DNA Gel Matrix	Not available.
	High Sensitivity DNA Dye	Lower: 2.6% Upper: 42 to 63%
	High Sensitivity DNA Ladder	Not available.
Vapour pressure	: High Sensitivity DNA Markers	Not available.
	High Sensitivity DNA Gel Matrix	Not available.
	High Sensitivity DNA Dye	0.056 kPa (0.42 mm Hg) [room temperature]
	High Sensitivity DNA Ladder	Not available.
Vapour density	: High Sensitivity DNA Markers	Not available.
	High Sensitivity DNA Gel Matrix	Not available.
	High Sensitivity DNA Dye	2.7 [Air = 1]
	High Sensitivity DNA Ladder	Not available.
Relative density	: High Sensitivity DNA Markers	Not available.
	High Sensitivity DNA Gel Matrix	Not available.
	High Sensitivity DNA Dye	1.1
	High Sensitivity DNA Ladder	Not available.
Solubility	: High Sensitivity DNA Markers	Easily soluble in the following materials: cold water and hot water.
	High Sensitivity DNA Gel Matrix	Easily soluble in the following materials: cold water and hot water.
	High Sensitivity DNA Dye	Easily soluble in the following materials: cold water and hot water.
	High Sensitivity DNA Ladder	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: High Sensitivity DNA Markers	Not available.
	High Sensitivity DNA Gel Matrix	Not available.
	High Sensitivity DNA Dye	Not available.
	High Sensitivity DNA Ladder	Not available.
Auto-ignition temperature	: High Sensitivity DNA Markers	Not available.
	High Sensitivity DNA Gel Matrix	Not applicable.
	High Sensitivity DNA Dye	Not available.
	High Sensitivity DNA Ladder	Not available.
Decomposition temperature	: High Sensitivity DNA Markers	Not available.
	High Sensitivity DNA Gel Matrix	Not available.
	High Sensitivity DNA Dye	Not available.
	High Sensitivity DNA Ladder	Not available.
Viscosity	: High Sensitivity DNA Markers	Not available.
	High Sensitivity DNA Gel Matrix	Not available.
	High Sensitivity DNA Dye	Not available.
	High Sensitivity DNA Ladder	Not available.

Section 10. Stability and reactivity

Reactivity	: High Sensitivity DNA Markers	No specific test data related to reactivity available for this product or its ingredients.
	High Sensitivity DNA Gel Matrix	No specific test data related to reactivity available for this product or its ingredients.
	High Sensitivity DNA Dye	No specific test data related to reactivity available for this product or its ingredients.
	High Sensitivity DNA Ladder	No specific test data related to reactivity available for this product or its ingredients.

Section 10. Stability and reactivity

Chemical stability	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	The product is stable. The product is stable. The product is stable. The product is stable.
Possibility of hazardous reactions	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	No specific data. No specific data. Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas. No specific data.
Incompatible materials	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. Reactive or incompatible with the following materials: oxidizing materials May react or be incompatible with oxidising materials.
Hazardous decomposition products	:	High Sensitivity DNA Markers High Sensitivity DNA Gel Matrix High Sensitivity DNA Dye High Sensitivity DNA Ladder	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
High Sensitivity DNA Dye Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
High Sensitivity DNA Dye Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure :

- High Sensitivity DNA Markers Not available.
- High Sensitivity DNA Gel Not available.
- Matrix
- High Sensitivity DNA Dye Routes of entry anticipated: Oral, Dermal, Inhalation.
- High Sensitivity DNA Ladder Not available.

Potential acute health effects

Eye contact :

- High Sensitivity DNA Markers No known significant effects or critical hazards.
- High Sensitivity DNA Gel No known significant effects or critical hazards.
- Matrix
- High Sensitivity DNA Dye No known significant effects or critical hazards.
- High Sensitivity DNA Ladder No known significant effects or critical hazards.

Inhalation :

- High Sensitivity DNA Markers No known significant effects or critical hazards.
- High Sensitivity DNA Gel No known significant effects or critical hazards.
- Matrix
- High Sensitivity DNA Dye No known significant effects or critical hazards.
- High Sensitivity DNA Ladder No known significant effects or critical hazards.

Skin contact :

- High Sensitivity DNA Markers No known significant effects or critical hazards.
- High Sensitivity DNA Gel No known significant effects or critical hazards.
- Matrix
- High Sensitivity DNA Dye No known significant effects or critical hazards.
- High Sensitivity DNA Ladder No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion	:	High Sensitivity DNA Markers	No known significant effects or critical hazards.
		High Sensitivity DNA Gel Matrix	No known significant effects or critical hazards.
		High Sensitivity DNA Dye	No known significant effects or critical hazards.
		High Sensitivity DNA Ladder	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:	High Sensitivity DNA Markers	No specific data.
		High Sensitivity DNA Gel Matrix	No specific data.
		High Sensitivity DNA Dye	No specific data.
		High Sensitivity DNA Ladder	No specific data.

Inhalation	:	High Sensitivity DNA Markers	No specific data.
		High Sensitivity DNA Gel Matrix	No specific data.
		High Sensitivity DNA Dye	No specific data.
		High Sensitivity DNA Ladder	No specific data.

Skin contact	:	High Sensitivity DNA Markers	No specific data.
		High Sensitivity DNA Gel Matrix	No specific data.
		High Sensitivity DNA Dye	No specific data.
		High Sensitivity DNA Ladder	No specific data.

Ingestion	:	High Sensitivity DNA Markers	No specific data.
		High Sensitivity DNA Gel Matrix	No specific data.
		High Sensitivity DNA Dye	No specific data.
		High Sensitivity DNA Ladder	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

Not available.

General	:	High Sensitivity DNA Markers	No known significant effects or critical hazards.
		High Sensitivity DNA Gel Matrix	No known significant effects or critical hazards.
		High Sensitivity DNA Dye	No known significant effects or critical hazards.
		High Sensitivity DNA Ladder	No known significant effects or critical hazards.

Carcinogenicity	:	High Sensitivity DNA Markers	No known significant effects or critical hazards.
		High Sensitivity DNA Gel Matrix	No known significant effects or critical hazards.
		High Sensitivity DNA Dye	No known significant effects or critical hazards.
		High Sensitivity DNA Ladder	No known significant effects or critical hazards.

Mutagenicity	:	High Sensitivity DNA Markers	No known significant effects or critical hazards.
		High Sensitivity DNA Gel Matrix	No known significant effects or critical hazards.
		High Sensitivity DNA Dye	No known significant effects or critical hazards.
		High Sensitivity DNA Ladder	No known significant effects or critical hazards.

Section 11. Toxicological information

Teratogenicity	: High Sensitivity DNA Markers	No known significant effects or critical hazards.
	High Sensitivity DNA Gel Matrix	No known significant effects or critical hazards.
	High Sensitivity DNA Dye	No known significant effects or critical hazards.
	High Sensitivity DNA Ladder	No known significant effects or critical hazards.
Developmental effects	: High Sensitivity DNA Markers	No known significant effects or critical hazards.
	High Sensitivity DNA Gel Matrix	No known significant effects or critical hazards.
	High Sensitivity DNA Dye	No known significant effects or critical hazards.
	High Sensitivity DNA Ladder	No known significant effects or critical hazards.
Fertility effects	: High Sensitivity DNA Markers	No known significant effects or critical hazards.
	High Sensitivity DNA Gel Matrix	No known significant effects or critical hazards.
	High Sensitivity DNA Dye	No known significant effects or critical hazards.
	High Sensitivity DNA Ladder	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
High Sensitivity DNA Dye Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 100 µl/L Marine water	Algae - Ulva lactuca	72 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
High Sensitivity DNA Dye Dimethyl sulfoxide	-1.35	3.16	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 minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and

Section 13. Disposal considerations

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

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

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 Annex II of Marpol and the IBC Code : Not available.

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

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Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

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	: <input checked="" type="checkbox"/> Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

Section 16. Any other relevant information

History

Date of issue/Date of revision : 30/10/2017
Date of previous issue : 16/02/2017.
Version : 4.1

Key to abbreviations

: ADG = Australian Dangerous Goods
 ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 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)
 NOHSC = National Occupational Health and Safety Commission
 SUSMP = Standard Uniform Schedule of Medicine and Poisons
 UN = United Nations

Procedure used to derive the classification

Classification	Justification
High Sensitivity DNA Dye Flam. Liq. 4, H227	On basis of test data

References : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

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