Conforms to US OSHA Hazard Communication 29CFR1910.1200

SAFETY DATA SHEET

Agilent Technologies

Agilent High Sensitivity DNA Kit, Part Number 5067-4626

Section 1. Identification

1.1 Product identifier

Product name : Agilent High Sensitivity DNA Kit, Part Number 5067-4626

Part no. (chemical kit) : 5067-4626

Part no. :

High Sensitivity DNA Reagent Kit 1	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.

Validation date : 1/21/2024

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

Identified uses : Analytical reagent.

High Sensitivity DNA Markers	2 x 400 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

1.3 Details of the supplier of the safety data sheet

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

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status :

High Sensitivity DNA Markers	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
High Sensitivity DNA Gel Matrix	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
High Sensitivity DNA Dye	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
High Sensitivity DNA Ladder	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

Section 2. Hazards identification

High Sensitivity DNA Dye

H227 FLAMMABLE LIQUIDS - Category 4
H320 EYE IRRITATION - Category 2B

High Sensitivity DNA Gel Matrix — Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 6.5%

2.2 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.
H320 - Causes eye irritation.
High Sensitivity DNA Ladder — No known significant effects or critical hazards.

Precautionary statements

Prevention

: High Sensitivity DNA Markers — Not applicable.
High Sensitivity DNA Gel Matrix — Not applicable.
High Sensitivity DNA Dye — P210 - Keep away from flames and hot surfaces. No smoking.
High Sensitivity DNA Ladder — Not applicable.

Response

: High Sensitivity DNA Markers — Not applicable.
High Sensitivity DNA Gel Matrix — Not applicable.
High Sensitivity DNA Dye — 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.
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 + P235 - Store in a well-ventilated place. 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

: 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.

2.3 Other hazards

Hazards not otherwise classified

: 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/information on ingredients

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

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

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

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

Section 4. First aid measures

4.1 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. If irritation persists, get medical attention.

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.

Section 4. First aid measures

	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. 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 Matrix	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.
	High Sensitivity DNA Dye	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.
	High Sensitivity DNA Ladder	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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact :	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	Causes eye irritation.
	High Sensitivity DNA Ladder	No known significant effects or critical hazards.

Section 4. First aid measures

Inhalation	:	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.
Skin contact	:	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.
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.

Over-exposure signs/symptoms

Eye contact	:	High Sensitivity DNA Markers	No specific data.
		High Sensitivity DNA Gel Matrix	No specific data.
		High Sensitivity DNA Dye	Adverse symptoms may include the following: irritation watering redness
		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.

4.3 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.

Section 4. First aid measures

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. Fire-fighting measures

5.1 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.
Unsuitable extinguishing media :	High Sensitivity DNA Markers	None known.
	High Sensitivity DNA Gel Matrix	None known.
	High Sensitivity DNA Dye	Do not use water jet.
	High Sensitivity DNA Ladder	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical :	High Sensitivity DNA Markers	In a fire or if heated, a pressure increase will occur and the container may burst.
	High Sensitivity DNA Gel Matrix	In a fire or if heated, a pressure increase will occur and the container may burst.
	High Sensitivity DNA Dye	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 vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.
	High Sensitivity DNA Ladder	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products :	High Sensitivity DNA Markers	No specific data.
	High Sensitivity DNA Gel Matrix	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides
	High Sensitivity DNA Dye	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	High Sensitivity DNA Ladder	No specific data.

5.3 Advice for firefighters

Section 5. Fire-fighting measures

Special protective actions for fire-fighters :	High Sensitivity DNA Markers	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.
	High Sensitivity DNA Gel Matrix	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.
	High Sensitivity DNA 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
	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.
Special protective equipment for fire-fighters :	High Sensitivity DNA Markers	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	High Sensitivity DNA Gel Matrix	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	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.
	High Sensitivity DNA Ladder	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

6.1 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 spilled 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 spilled 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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. 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

	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 spilled material. Put on appropriate personal protective equipment.
For emergency responders :	High Sensitivity DNA Markers	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".
	High Sensitivity DNA Gel Matrix	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".
	High Sensitivity DNA 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".
	High Sensitivity DNA Ladder	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".
6.2 Environmental precautions :	High Sensitivity DNA Markers	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).
	High Sensitivity DNA Gel Matrix	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).
	High Sensitivity DNA 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).
	High Sensitivity DNA Ladder	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials 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

Section 6. Accidental release measures

		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

7.1 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 vapor 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 (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

Section 7. Handling and storage

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.

7.2 Conditions for safe storage, including any incompatibilities

: High Sensitivity DNA Markers

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.

High Sensitivity DNA Gel Matrix

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.

High Sensitivity DNA Dye

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 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.

High Sensitivity DNA Ladder

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Section 7. Handling and storage

Recommendations :

High Sensitivity DNA Markers	Industrial applications, Professional applications.
High Sensitivity DNA Gel Matrix	Industrial applications, Professional applications.
High Sensitivity DNA Dye	Industrial applications, Professional applications.
High Sensitivity DNA Ladder	Industrial applications, Professional applications.

Industrial sector specific solutions :

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 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
High Sensitivity DNA Dye Dimethyl sulfoxide	**OARS WEEL (United States, 4/2022).** TWA: 250 ppm 8 hours.

Biological exposure indices

No exposure indices known.

8.2 Exposure controls

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: 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.

Section 8. Exposure controls/personal protection

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	: High Sensitivity DNA Markers	Liquid.
	High Sensitivity DNA Gel Matrix	Liquid.
	High Sensitivity DNA Dye	Liquid.
	High Sensitivity DNA Ladder	Liquid.
Color	: 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.
Odor	: High Sensitivity DNA Markers	Odorless.
	High Sensitivity DNA Gel Matrix	Odorless.
	High Sensitivity DNA Dye	Slight
	High Sensitivity DNA Ladder	Odorless.
Odor threshold	: 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.
pH	: High Sensitivity DNA Markers	6.5 to 8
	High Sensitivity DNA Gel Matrix	Not available.
	High Sensitivity DNA Dye	Not available.
	High Sensitivity DNA Ladder	7.6
Melting point/freezing point	: High Sensitivity DNA Markers	0°C (32°F)
	High Sensitivity DNA Gel Matrix	Not available.
	High Sensitivity DNA Dye	18.4°C (65.1°F)
	High Sensitivity DNA Ladder	0°C (32°F)
Boiling point, initial boiling point, and boiling range	: High Sensitivity DNA Markers	100°C (212°F)
	High Sensitivity DNA Gel Matrix	Not available.
	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 Matrix	Not available.
	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 Matrix	Not available.
	High Sensitivity DNA Dye	Not available.
	High Sensitivity DNA Ladder	Not available.
Flammability	: 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.
Lower and upper explosion limit/flammability limit	: 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.
Vapor pressure	: High Sensitivity DNA Dye	0.056 kPa (0.42 mm Hg)

Section 9. Physical and chemical properties and safety characteristics

Ingredient name	Vapor Pressure at 20˚C			Vapor pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
High Sensitivity DNA Markers						
water	17.5	2.3	-	92.258	12.3	-
High Sensitivity DNA Gel Matrix						
water	17.5	2.3	-	92.258	12.3	-
High Sensitivity DNA Ladder						
water	17.5	2.3	-	92.258	12.3	-

Relative vapor 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(ies) :

Media	Result
High Sensitivity DNA Markers	
water	Soluble
High Sensitivity DNA Gel Matrix	
water	Soluble
High Sensitivity DNA Dye	
water	Soluble
High Sensitivity DNA Ladder	
water	Soluble

Partition coefficient: n-octanol/water :

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.

Auto-ignition temperature :

Ingredient name	°C	°F	Method
High Sensitivity DNA Dye			
Dimethyl sulfoxide	300 to 302	572 to 575.6	-

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.

Particle characteristics

Section 9. Physical and chemical properties and safety characteristics

Median particle size	:	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.

Section 10. Stability and reactivity

10.1 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.
10.2 Chemical stability	:	High Sensitivity DNA Markers	The product is stable.
		High Sensitivity DNA Gel Matrix	The product is stable.
		High Sensitivity DNA Dye	The product is stable.
		High Sensitivity DNA Ladder	The product is stable.
10.3 Possibility of hazardous reactions	:	High Sensitivity DNA Markers	Under normal conditions of storage and use, hazardous reactions will not occur.
		High Sensitivity DNA Gel Matrix	Under normal conditions of storage and use, hazardous reactions will not occur.
		High Sensitivity DNA Dye	Under normal conditions of storage and use, hazardous reactions will not occur.
		High Sensitivity DNA Ladder	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	High Sensitivity DNA Markers	No specific data.
		High Sensitivity DNA Gel Matrix	No specific data.
		High Sensitivity DNA Dye	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
		High Sensitivity DNA Ladder	No specific data.
10.5 Incompatible materials	:	High Sensitivity DNA Markers	May react or be incompatible with oxidizing materials.
		High Sensitivity DNA Gel Matrix	May react or be incompatible with oxidizing materials.
		High Sensitivity DNA Dye	Reactive or incompatible with the following materials: oxidizing materials
		High Sensitivity DNA Ladder	May react or be incompatible with oxidizing materials.
10.6 Hazardous decomposition products	:	High Sensitivity DNA Markers	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		High Sensitivity DNA Gel Matrix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		High Sensitivity DNA Dye	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 10. Stability and reactivity

High Sensitivity DNA Ladder	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

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

Irritation/Corrosion

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

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)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure :

High Sensitivity DNA Markers	Not available.
High Sensitivity DNA Gel Matrix	Not available.
High Sensitivity DNA Dye	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
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 Matrix	No known significant effects or critical hazards.
High Sensitivity DNA Dye	Causes eye irritation.
High Sensitivity DNA Ladder	No known significant effects or critical hazards.

Section 11. Toxicological information

Inhalation	:	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.
Skin contact	:	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.
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	Adverse symptoms may include the following: irritation watering redness
		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 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	:	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.

Section 11. Toxicological information

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.
Reproductive toxicity	:	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

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
High Sensitivity DNA Dye Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A

Section 12. Ecological information

12.1 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 ul/L Marine water	Algae - *Ulva lactuca*	72 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - *Daphnia magna* - Juvenile (Fledgling, Hatchling, Weanling)	21 days

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
High Sensitivity DNA Dye Dimethyl sulfoxide	OECD 301D Ready Biodegradability - Closed Bottle Test	31 % - Not readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
High Sensitivity DNA Dye Dimethyl sulfoxide	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
High Sensitivity DNA Dye Dimethyl sulfoxide	-1.35	3.16	Low

12.4 Mobility in soil

Section 12. Ecological information

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

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.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

DOT / TDG / Mexico / 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

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

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

Section 15. Regulatory information

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification :

High Sensitivity DNA Markers	Not applicable.
High Sensitivity DNA Gel Matrix	Not applicable.
High Sensitivity DNA Dye	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B
High Sensitivity DNA Ladder	Not applicable.

Composition/information on ingredients

Name	%	Classification
High Sensitivity DNA Dye Dimethyl sulfoxide	≥90	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : The following components are listed: DIMETHYL SULFOXIDE; METHANE, SULFINYLBIS-

Pennsylvania : None of the components are listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

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.

Japan : **Japan inventory (CSCL)**: Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : Not determined.

Philippines : Not determined.

Section 15. Regulatory information

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

Procedure used to derive the classification

Classification	Justification
High Sensitivity DNA Dye FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B	 On basis of test data Calculation method

History

Date of issue/Date of revision : 01/21/2024

Date of previous issue : 02/23/2021

Version : 9

Key to abbreviations : 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)
N/A = Not available
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

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