

SAFETY DATA SHEET

Agilent DNA 1000 Kit, Part Number 5067-1504

Section 1. Identification

1.1 Product identifier

Product name : Agilent DNA 1000 Kit, Part Number 5067-1504

Part no. (chemical kit) : 5067-1504

Part no. : Reagents DNA 1000 G2938-80020
 DNA 1000 Gel Matrix Not available.
 DNA Dye Concentrate Not available.
 DNA 1000 Marker Not available.
 DNA 1000 Ladder Not available.

Validation date : 10/30/2019

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

Material uses : Analytical reagent.
 Research and Development

DNA 1000 Gel Matrix	3 x 0.5 ml
DNA Dye Concentrate	1 x 0.09 ml
DNA 1000 Marker	2 x 1.2 ml
DNA 1000 Ladder	1 x 0.035 ml

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	: DNA 1000 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.
	: DNA Dye Concentrate	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	: DNA 1000 Marker	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.
	: DNA 1000 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.

Section 2. Hazards identification

Classification of the substance or mixture

DNA Dye Concentrate

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

Ingredients of unknown toxicity	: DNA 1000 Gel Matrix	Percentage of the mixture consisting of ingredient (s) of unknown acute dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient (s) of unknown acute inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient (s) of unknown acute oral toxicity: 1 - 10%
	DNA 1000 Marker	Percentage of the mixture consisting of ingredient (s) of unknown acute dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient (s) of unknown acute inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient (s) of unknown acute oral toxicity: 1 - 10%
	<input checked="" type="checkbox"/> DNA 1000 Gel Matrix	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 4.4%
	DNA 1000 Marker	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 4.6%

2.2 GHS label elements

Signal word	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	No signal word. Warning No signal word. No signal word.
Hazard statements	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	No known significant effects or critical hazards. H227 - Combustible liquid. H320 - Causes eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards.
<u>Precautionary statements</u>		
Prevention	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not applicable. P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from flames and hot surfaces. - No smoking. P264 - Wash hands thoroughly after handling. Not applicable. Not applicable.
Response	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not applicable. 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 attention. Not applicable. Not applicable.
Storage	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not applicable. P403 - Store in a well-ventilated place. P235 - Keep cool. Not applicable. Not applicable.

Section 2. Hazards identification

Disposal	: DNA 1000 Gel Matrix DNA Dye Concentrate	Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	DNA 1000 Marker DNA 1000 Ladder	Not applicable. Not applicable.
Supplemental label elements	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	None known. None known. None known. None known.
2.3 Other hazards		
Hazards not otherwise classified	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	None known. None known. None known. None known.

Section 3. Composition/information on ingredients

Substance/mixture	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Mixture Mixture Mixture Mixture
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Ingredient name	%	CAS number
DNA Dye Concentrate 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 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

4.1 Description of necessary first aid measures

Eye contact	: DNA 1000 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.
	DNA Dye Concentrate	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.
	DNA 1000 Marker	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.
	DNA 1000 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.

Section 4. First aid measures

Inhalation	: DNA 1000 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.
	DNA Dye Concentrate	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.
	DNA 1000 Marker	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.
	DNA 1000 Ladder	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: DNA 1000 Gel Matrix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	DNA Dye Concentrate	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.
	DNA 1000 Marker	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	DNA 1000 Ladder	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: DNA 1000 Gel Matrix	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.
	DNA Dye Concentrate	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

Section 4. First aid measures

DNA 1000 Marker	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.
DNA 1000 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. 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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	No known significant effects or critical hazards. Causes eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards.
Inhalation	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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	: DNA 1000 Gel Matrix DNA Dye Concentrate	No specific data. Adverse symptoms may include the following: irritation watering redness
	DNA 1000 Marker DNA 1000 Ladder	No specific data. No specific data.
Inhalation	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	No specific data. No specific data. No specific data. No specific data.

Section 4. First aid measures

Skin contact	: DNA 1000 Gel Matrix	No specific data.
	DNA Dye Concentrate	No specific data.
	DNA 1000 Marker	No specific data.
	DNA 1000 Ladder	No specific data.
Ingestion	: DNA 1000 Gel Matrix	No specific data.
	DNA Dye Concentrate	No specific data.
	DNA 1000 Marker	No specific data.
	DNA 1000 Ladder	No specific data.

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

Notes to physician	: DNA 1000 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.
	DNA Dye Concentrate	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	DNA 1000 Marker	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.
	DNA 1000 Ladder	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: DNA 1000 Gel Matrix	No specific treatment.
	DNA Dye Concentrate	No specific treatment.
	DNA 1000 Marker	No specific treatment.
	DNA 1000 Ladder	No specific treatment.
Protection of first-aiders	: DNA 1000 Gel Matrix	No action shall be taken involving any personal risk or without suitable training.
	DNA Dye Concentrate	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.
	DNA 1000 Marker	No action shall be taken involving any personal risk or without suitable training.
	DNA 1000 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	: DNA 1000 Gel Matrix	Use an extinguishing agent suitable for the surrounding fire.
	DNA Dye Concentrate	Use dry chemical, CO ₂ , water spray (fog) or foam.
	DNA 1000 Marker	Use an extinguishing agent suitable for the surrounding fire.
	DNA 1000 Ladder	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: DNA 1000 Gel Matrix	None known.
	DNA Dye Concentrate	Do not use water jet.
	DNA 1000 Marker	None known.
	DNA 1000 Ladder	None known.

Section 5. Fire-fighting measures

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: DNA 1000 Gel Matrix	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 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. 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.
	DNA Dye Concentrate	
	DNA 1000 Marker	
	DNA 1000 Ladder	
Hazardous thermal decomposition products	: DNA 1000 Gel Matrix	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 Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides No specific data.
	DNA Dye Concentrate	
	DNA 1000 Marker	
	DNA 1000 Ladder	

5.3 Advice for firefighters

Special protective actions for fire-fighters	: DNA 1000 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. 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. 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.
	DNA Dye Concentrate	
	DNA 1000 Marker	
	DNA 1000 Ladder	

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters	: DNA 1000 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.
	DNA Dye Concentrate	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	DNA 1000 Marker	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	DNA 1000 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	: DNA 1000 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.
	DNA Dye Concentrate	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.
	DNA 1000 Marker	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.
	DNA 1000 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	: DNA 1000 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".
	DNA Dye Concentrate	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".
	DNA 1000 Marker	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

Section 6. Accidental release measures

DNA 1000 Ladder

the information in "For non-emergency personnel". 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

: DNA 1000 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).

DNA Dye Concentrate

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).

DNA 1000 Marker

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).

DNA 1000 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 : DNA 1000 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.

DNA Dye Concentrate

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.

DNA 1000 Marker

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.

DNA 1000 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	: DNA 1000 Gel Matrix	Put on appropriate personal protective equipment (see Section 8).
	DNA Dye Concentrate	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.
	DNA 1000 Marker	Put on appropriate personal protective equipment (see Section 8).
	DNA 1000 Ladder	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: DNA 1000 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.
	DNA Dye Concentrate	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.
	DNA 1000 Marker	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.
	DNA 1000 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.

7.2 Conditions for safe storage, including any incompatibilities

Section 7. Handling and storage

DNA 1000 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.

DNA Dye Concentrate

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 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.

DNA 1000 Marker

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.

DNA 1000 Ladder

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)

Recommendations

: DNA 1000 Gel Matrix
DNA Dye Concentrate
DNA 1000 Marker
DNA 1000 Ladder

Industrial applications, Professional applications.
Industrial applications, Professional applications.
Industrial applications, Professional applications.
Industrial applications, Professional applications.

Section 7. Handling and storage

Industrial sector specific solutions	: DNA 1000 Gel Matrix	Not applicable.
	DNA Dye Concentrate	Not applicable.
	DNA 1000 Marker	Not applicable.
	DNA 1000 Ladder	Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
DNA Dye Concentrate Dimethyl sulfoxide	AIHA WEEL (United States, 7/2018). TWA: 250 ppm 8 hours.

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.

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

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Liquid. Liquid. Liquid. Liquid.
Color	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Blue. Not available. Not available.
Odor	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Not available. Not available. Not available.
Odor threshold	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Not available. Not available. Not available.
pH	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	8 Not available. 8 Not available.
Melting point	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. 18.5°C (65.3°F) 0°C (32°F) 0°C (32°F)
Boiling point	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. 189°C (372.2°F) 100°C (212°F) 100°C (212°F)
Flash point	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Closed cup: 87°C (188.6°F) Not available. Not available.
Evaporation rate	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Not available. Not available. Not available.
Flammability (solid, gas)	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not applicable. Not applicable. Not applicable. Not applicable.
Lower and upper explosive (flammable) limits	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Lower: 2.6% Upper: 42% Not available. Not available.
Vapor pressure	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Not available. Not available. Not available.
Vapor density	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. 2.7 [Air = 1] Not available. Not available.

Section 9. Physical and chemical properties

Relative density	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Not available. Not available. Not available.
Solubility	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Not available. Not available. Not available.
Auto-ignition temperature	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Not available. Not available. Not available.
Decomposition temperature	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Not available. Not available. Not available.
Viscosity	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	Not available. Not available. Not available. Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 Ladder	The product is stable. The product is stable. The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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.

Section 10. Stability and reactivity

10.4 Conditions to avoid	: DNA 1000 Gel Matrix DNA Dye Concentrate	No specific data. 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.
	DNA 1000 Marker DNA 1000 Ladder	No specific data. No specific data.
10.5 Incompatible materials	: DNA 1000 Gel Matrix DNA Dye Concentrate	May react or be incompatible with oxidizing materials. Reactive or incompatible with the following materials: oxidizing materials
	DNA 1000 Marker DNA 1000 Ladder	May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.
10.6 Hazardous decomposition products	: DNA 1000 Gel Matrix DNA Dye Concentrate	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	DNA 1000 Marker DNA 1000 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.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

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

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
DNA Dye Concentrate 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	-

Sensitization

Not available.

Mutagenicity

Section 11. Toxicological information

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	: DNA 1000 Gel Matrix	Not available.
	DNA Dye Concentrate	Routes of entry anticipated: Oral, Dermal, Inhalation.
	DNA 1000 Marker	Not available.
	DNA 1000 Ladder	Not available.

Potential acute health effects

Eye contact	: DNA 1000 Gel Matrix	No known significant effects or critical hazards.
	DNA Dye Concentrate	Causes eye irritation.
	DNA 1000 Marker	No known significant effects or critical hazards.
	DNA 1000 Ladder	No known significant effects or critical hazards.
Inhalation	: DNA 1000 Gel Matrix	No known significant effects or critical hazards.
	DNA Dye Concentrate	No known significant effects or critical hazards.
	DNA 1000 Marker	No known significant effects or critical hazards.
	DNA 1000 Ladder	No known significant effects or critical hazards.
Skin contact	: DNA 1000 Gel Matrix	No known significant effects or critical hazards.
	DNA Dye Concentrate	No known significant effects or critical hazards.
	DNA 1000 Marker	No known significant effects or critical hazards.
	DNA 1000 Ladder	No known significant effects or critical hazards.
Ingestion	: DNA 1000 Gel Matrix	No known significant effects or critical hazards.
	DNA Dye Concentrate	No known significant effects or critical hazards.
	DNA 1000 Marker	No known significant effects or critical hazards.
	DNA 1000 Ladder	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: DNA 1000 Gel Matrix	No specific data.
	DNA Dye Concentrate	Adverse symptoms may include the following: irritation watering redness
	DNA 1000 Marker	No specific data.
	DNA 1000 Ladder	No specific data.
Inhalation	: DNA 1000 Gel Matrix	No specific data.
	DNA Dye Concentrate	No specific data.
	DNA 1000 Marker	No specific data.
	DNA 1000 Ladder	No specific data.

Section 11. Toxicological information

Skin contact	: DNA 1000 Gel Matrix	No specific data.
	: DNA Dye Concentrate	No specific data.
	: DNA 1000 Marker	No specific data.
	: DNA 1000 Ladder	No specific data.
Ingestion	: DNA 1000 Gel Matrix	No specific data.
	: DNA Dye Concentrate	No specific data.
	: DNA 1000 Marker	No specific data.
	: DNA 1000 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	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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.
Carcinogenicity	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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.
Mutagenicity	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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.
Teratogenicity	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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.
Developmental effects	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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.
Fertility effects	: DNA 1000 Gel Matrix DNA Dye Concentrate DNA 1000 Marker DNA 1000 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.

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)
DNA Dye Concentrate Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A

Section 11. Toxicological information

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
DNA Dye Concentrate 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
	Chronic NOEC 100 µl/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	21 days

12.2 Persistence and degradability

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

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

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
DNA Dye Concentrate Dimethyl sulfoxide	-1.35	3.16	low

12.4 Mobility in soil

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

Section 13. Disposal considerations

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

Section 15. Regulatory information

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

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

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

Section 15. Regulatory information

Classification	: DNA 1000 Gel Matrix DNA Dye Concentrate	Not applicable. FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B
	DNA 1000 Marker DNA 1000 Ladder	Not applicable. Not applicable.

Composition/information on ingredients

Name	%	Classification
DNA Dye Concentrate Dimethyl sulfoxide	≥90	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2A

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

Section 16. Other information

History

Date of issue : 10/30/2019

Date of previous issue : 09/05/2017

Version : 7

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

Procedure used to derive the classification

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

☑ Indicates information that has changed from previously issued version.

Notice to reader

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