Conforms to HPR 2015

SAFETY DATA SHEET

Agilent Technologies

Agilent DNA 12000 Reagents, Part Number 5067-1509

Section 1. Identification

Product identifier : Agilent DNA 12000 Reagents, Part Number 5067-1509

Part no. (chemical kit) : 5067-1509

Part no. :

Reagents DNA 12000	G2938-80022
DNA 12000 Gel Matrix	Not available.
DNA Dye Concentrate	Not available.
DNA 12000 Marker	Not available.
DNA 12000 Ladder	Not available.

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

Identified uses : Analytical reagent.
For research use only.

DNA 12000 Gel Matrix	3 x 0.5 ml
DNA Dye Concentrate	1 x 0.09 ml
DNA 12000 Marker	2 x 1.2 ml
DNA 12000 Ladder	1 x 0.035 ml

Uses advised against : Not for use in diagnostic procedures.

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

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

Section 2. Hazard identification

Classification of the substance or mixture

DNA Dye Concentrate

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

GHS label elements

Signal word :

DNA 12000 Gel Matrix	No signal word.
DNA Dye Concentrate	Warning
DNA 12000 Marker	No signal word.
DNA 12000 Ladder	No signal word.

Hazard statements :

DNA 12000 Gel Matrix	No known significant effects or critical hazards.
DNA Dye Concentrate	H227 - Combustible liquid. H320 - Causes eye irritation.
DNA 12000 Marker	No known significant effects or critical hazards.
DNA 12000 Ladder	No known significant effects or critical hazards.

Precautionary statements

Prevention :

DNA 12000 Gel Matrix	Not applicable.
DNA Dye Concentrate	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
DNA 12000 Marker	Not applicable.
DNA 12000 Ladder	Not applicable.

Section 2. Hazard identification

Response	:	DNA 12000 Gel Matrix	Not applicable.
		DNA Dye Concentrate	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.
		DNA 12000 Marker	Not applicable.
		DNA 12000 Ladder	Not applicable.
Storage	:	DNA 12000 Gel Matrix	Not applicable.
		DNA Dye Concentrate	Not applicable.
		DNA 12000 Marker	Not applicable.
		DNA 12000 Ladder	Not applicable.
Disposal	:	DNA 12000 Gel Matrix	Not applicable.
		DNA Dye Concentrate	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		DNA 12000 Marker	Not applicable.
		DNA 12000 Ladder	Not applicable.
Supplemental label elements	:	DNA 12000 Gel Matrix	None known.
		DNA Dye Concentrate	None known.
		DNA 12000 Marker	None known.
		DNA 12000 Ladder	None known.
		DNA 12000 Gel Matrix	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 4.6%
		DNA 12000 Marker	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 4.6%
Other hazards which do not result in classification	:	DNA 12000 Gel Matrix	None known.
		DNA Dye Concentrate	None known.
		DNA 12000 Marker	None known.
		DNA 12000 Ladder	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	DNA 12000 Gel Matrix	Mixture
		DNA Dye Concentrate	Mixture
		DNA 12000 Marker	Mixture
		DNA 12000 Ladder	Mixture

Ingredient name	Synonyms	% (w/w)	CAS number
DNA Dye Concentrate			
Dimethyl sulfoxide	Dimethyl sulfoxide	≥80	67-68-5

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

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

Description of necessary first aid measures

Section 4. First-aid measures

Eye contact	:	DNA 12000 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 12000 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 12000 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	:	DNA 12000 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 12000 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 12000 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 12000 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 12000 Marker	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		DNA 12000 Ladder	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Section 4. First-aid measures

Ingestion	:	DNA 12000 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.
		DNA Dye Concentrate	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.
		DNA 12000 Marker	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.
		DNA 12000 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	DNA 12000 Gel Matrix	No known significant effects or critical hazards.
		DNA Dye Concentrate	Causes eye irritation.
		DNA 12000 Marker	No known significant effects or critical hazards.
		DNA 12000 Ladder	No known significant effects or critical hazards.
Inhalation	:	DNA 12000 Gel Matrix	No known significant effects or critical hazards.
		DNA Dye Concentrate	No known significant effects or critical hazards.
		DNA 12000 Marker	No known significant effects or critical hazards.
		DNA 12000 Ladder	No known significant effects or critical hazards.
Skin contact	:	DNA 12000 Gel Matrix	No known significant effects or critical hazards.
		DNA Dye Concentrate	No known significant effects or critical hazards.
		DNA 12000 Marker	No known significant effects or critical hazards.
		DNA 12000 Ladder	No known significant effects or critical hazards.
Ingestion	:	DNA 12000 Gel Matrix	No known significant effects or critical hazards.
		DNA Dye Concentrate	No known significant effects or critical hazards.
		DNA 12000 Marker	No known significant effects or critical hazards.
		DNA 12000 Ladder	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	DNA 12000 Gel Matrix	No specific data.
		DNA Dye Concentrate	Adverse symptoms may include the following: irritation watering redness
		DNA 12000 Marker	No specific data.
		DNA 12000 Ladder	No specific data.

Section 4. First-aid measures

Inhalation	:	DNA 12000 Gel Matrix	No specific data.
		DNA Dye Concentrate	No specific data.
		DNA 12000 Marker	No specific data.
		DNA 12000 Ladder	No specific data.
Skin contact	:	DNA 12000 Gel Matrix	No specific data.
		DNA Dye Concentrate	No specific data.
		DNA 12000 Marker	No specific data.
		DNA 12000 Ladder	No specific data.
Ingestion	:	DNA 12000 Gel Matrix	No specific data.
		DNA Dye Concentrate	No specific data.
		DNA 12000 Marker	No specific data.
		DNA 12000 Ladder	No specific data.

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

Notes to physician	:	DNA 12000 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 12000 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 12000 Ladder	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	:	DNA 12000 Gel Matrix	No specific treatment.
		DNA Dye Concentrate	No specific treatment.
		DNA 12000 Marker	No specific treatment.
		DNA 12000 Ladder	No specific treatment.
Protection of first-aiders	:	DNA 12000 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 12000 Marker	No action shall be taken involving any personal risk or without suitable training.
		DNA 12000 Ladder	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	DNA 12000 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 12000 Marker	Use an extinguishing agent suitable for the surrounding fire.
		DNA 12000 Ladder	Use an extinguishing agent suitable for the surrounding fire.

Section 5. Fire-fighting measures

Unsuitable extinguishing media :	DNA 12000 Gel Matrix	None known.
	DNA Dye Concentrate	Do not use water jet.
	DNA 12000 Marker	None known.
	DNA 12000 Ladder	None known.
Specific hazards arising from the chemical :	DNA 12000 Gel Matrix	In a fire or if heated, a pressure increase will occur and the container may burst.
	DNA Dye Concentrate	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.
	DNA 12000 Marker	In a fire or if heated, a pressure increase will occur and the container may burst.
	DNA 12000 Ladder	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products :	DNA 12000 Gel Matrix	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides
	DNA Dye Concentrate	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	DNA 12000 Marker	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides
	DNA 12000 Ladder	No specific data.
Special protective actions for fire-fighters :	DNA 12000 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.
	DNA Dye Concentrate	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.
	DNA 12000 Marker	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 12000 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.

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters	:	DNA 12000 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 12000 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 12000 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

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	DNA 12000 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 12000 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 12000 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 12000 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 12000 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 the information in "For non-emergency personnel".

Section 6. Accidental release measures

	DNA 12000 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".
Environmental precautions :	DNA 12000 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 12000 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 12000 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).

Methods and materials for containment and cleaning up

Methods for cleaning up :	DNA 12000 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 12000 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 12000 Ladder	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	DNA 12000 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 12000 Marker	Put on appropriate personal protective equipment (see Section 8).
		DNA 12000 Ladder	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	:	DNA 12000 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 12000 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 12000 Ladder	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	DNA 12000 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

Section 7. Handling and storage

	containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
DNA Dye Concentrate	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 12000 Marker	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 12000 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

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

Biological exposure indices

No exposure indices known.

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.

Section 8. Exposure controls/personal protection

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 and safety characteristics

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

Appearance

Physical state :	DNA 12000 Gel Matrix	Liquid.
	DNA Dye Concentrate	Liquid.
	DNA 12000 Marker	Liquid.
	DNA 12000 Ladder	Liquid.
Color :	DNA 12000 Gel Matrix	Not available.
	DNA Dye Concentrate	Blue.
	DNA 12000 Marker	Not available.
	DNA 12000 Ladder	Not available.
Odor :	DNA 12000 Gel Matrix	Not available.
	DNA Dye Concentrate	Not available.
	DNA 12000 Marker	Not available.
	DNA 12000 Ladder	Not available.
Odor threshold :	DNA 12000 Gel Matrix	Not available.
	DNA Dye Concentrate	Not available.
	DNA 12000 Marker	Not available.
	DNA 12000 Ladder	Not available.

pH :

Section 9. Physical and chemical properties and safety characteristics

DNA 12000 Gel Matrix — Not available.
DNA Dye Concentrate — Not available.
DNA 12000 Marker — Not available.
DNA 12000 Ladder — Not available.

Melting point/freezing point :
DNA 12000 Gel Matrix — Not available.
DNA Dye Concentrate — 18.5°C (65.3°F)
DNA 12000 Marker — 0°C (32°F)
DNA 12000 Ladder — 0°C (32°F)

Boiling point, initial boiling point, and boiling range :
DNA 12000 Gel Matrix — Not available.
DNA Dye Concentrate — 189°C (372.2°F)
DNA 12000 Marker — 100°C (212°F)
DNA 12000 Ladder — 100°C (212°F)

Flash point :
DNA 12000 Gel Matrix — Not available.
DNA Dye Concentrate — Closed cup: 87°C (188.6°F)
DNA 12000 Marker — Not available.
DNA 12000 Ladder — Not available.

Evaporation rate :
DNA 12000 Gel Matrix — Not available.
DNA Dye Concentrate — Not available.
DNA 12000 Marker — Not available.
DNA 12000 Ladder — Not available.

Flammability :
DNA 12000 Gel Matrix — Not applicable.
DNA Dye Concentrate — Not applicable.
DNA 12000 Marker — Not applicable.
DNA 12000 Ladder — Not applicable.

Lower and upper explosion limit/flammability limit :
DNA 12000 Gel Matrix — Not available.
DNA Dye Concentrate — Lower: 2.6%; Upper: 42%
DNA 12000 Marker — Not available.
DNA 12000 Ladder — Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20˚C			Vapor pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
DNA 12000 Gel Matrix						
water	17.5	2.3	-	92.258	12.3	-
DNA Dye Concentrate						
Dimethyl sulfoxide	0.42	0.056	EU A.4	-	-	-
DNA 12000 Marker						
water	17.5	2.3	-	92.258	12.3	-
DNA 12000 Ladder						
water	17.5	2.3	-	92.258	12.3	-

Relative vapor density :
DNA 12000 Gel Matrix — Not available.
DNA Dye Concentrate — 2.7 [Air = 1]
DNA 12000 Marker — Not available.
DNA 12000 Ladder — Not available.

Section 9. Physical and chemical properties and safety characteristics

Relative density :

DNA 12000 Gel Matrix	Not available.
DNA Dye Concentrate	Not available.
DNA 12000 Marker	Not available.
DNA 12000 Ladder	Not available.

Solubility(ies) :

Media	Result
DNA 12000 Gel Matrix	
water	Soluble
DNA Dye Concentrate	
water	Soluble
DNA 12000 Marker	
water	Soluble
DNA 12000 Ladder	
water	Soluble

Partition coefficient: n-octanol/water :

DNA 12000 Gel Matrix	Not applicable.
DNA Dye Concentrate	Not applicable.
DNA 12000 Marker	Not applicable.
DNA 12000 Ladder	Not applicable.

Auto-ignition temperature :

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

Decomposition temperature :

DNA 12000 Gel Matrix	Not available.
DNA Dye Concentrate	Not available.
DNA 12000 Marker	Not available.
DNA 12000 Ladder	Not available.

Viscosity :

DNA 12000 Gel Matrix	Not available.
DNA Dye Concentrate	Not available.
DNA 12000 Marker	Not available.
DNA 12000 Ladder	Not available.

Particle characteristics

Median particle size :

DNA 12000 Gel Matrix	Not applicable.
DNA Dye Concentrate	Not applicable.
DNA 12000 Marker	Not applicable.
DNA 12000 Ladder	Not applicable.

Section 10. Stability and reactivity

Reactivity :

DNA 12000 Gel Matrix	No specific test data related to reactivity available for this product or its ingredients.
DNA Dye Concentrate	No specific test data related to reactivity available for this product or its ingredients.
DNA 12000 Marker	No specific test data related to reactivity available for this product or its ingredients.
DNA 12000 Ladder	No specific test data related to reactivity available for this product or its ingredients.

Chemical stability :

DNA 12000 Gel Matrix	The product is stable.
DNA Dye Concentrate	The product is stable.
DNA 12000 Marker	The product is stable.
DNA 12000 Ladder	The product is stable.

Section 10. Stability and reactivity

Possibility of hazardous reactions

DNA 12000 Gel Matrix	Under normal conditions of storage and use, hazardous reactions will not occur.
DNA Dye Concentrate	Under normal conditions of storage and use, hazardous reactions will not occur.
DNA 12000 Marker	Under normal conditions of storage and use, hazardous reactions will not occur.
DNA 12000 Ladder	Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid

DNA 12000 Gel Matrix	No specific data.
DNA Dye Concentrate	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 12000 Marker	No specific data.
DNA 12000 Ladder	No specific data.

Incompatible materials

DNA 12000 Gel Matrix	May react or be incompatible with oxidizing materials.
DNA Dye Concentrate	Reactive or incompatible with the following materials: oxidizing materials
DNA 12000 Marker	May react or be incompatible with oxidizing materials.
DNA 12000 Ladder	May react or be incompatible with oxidizing materials.

Hazardous decomposition products

DNA 12000 Gel Matrix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
DNA Dye Concentrate	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
DNA 12000 Marker	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
DNA 12000 Ladder	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
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	-	100 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

Sensitization

Section 11. Toxicological information

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	:	DNA 12000 Gel Matrix	Not available.
		DNA Dye Concentrate	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
		DNA 12000 Marker	Not available.
		DNA 12000 Ladder	Not available.
Potential acute health effects			
Eye contact	:	DNA 12000 Gel Matrix	No known significant effects or critical hazards.
		DNA Dye Concentrate	Causes eye irritation.
		DNA 12000 Marker	No known significant effects or critical hazards.
		DNA 12000 Ladder	No known significant effects or critical hazards.
Inhalation	:	DNA 12000 Gel Matrix	No known significant effects or critical hazards.
		DNA Dye Concentrate	No known significant effects or critical hazards.
		DNA 12000 Marker	No known significant effects or critical hazards.
		DNA 12000 Ladder	No known significant effects or critical hazards.
Skin contact	:	DNA 12000 Gel Matrix	No known significant effects or critical hazards.
		DNA Dye Concentrate	No known significant effects or critical hazards.
		DNA 12000 Marker	No known significant effects or critical hazards.
		DNA 12000 Ladder	No known significant effects or critical hazards.
Ingestion	:	DNA 12000 Gel Matrix	No known significant effects or critical hazards.
		DNA Dye Concentrate	No known significant effects or critical hazards.
		DNA 12000 Marker	No known significant effects or critical hazards.
		DNA 12000 Ladder	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:	DNA 12000 Gel Matrix	No specific data.
		DNA Dye Concentrate	Adverse symptoms may include the following: irritation watering redness
		DNA 12000 Marker	No specific data.
		DNA 12000 Ladder	No specific data.
Inhalation	:	DNA 12000 Gel Matrix	No specific data.
		DNA Dye Concentrate	No specific data.
		DNA 12000 Marker	No specific data.
		DNA 12000 Ladder	No specific data.

Section 11. Toxicological information

Skin contact :

DNA 12000 Gel Matrix	No specific data.
DNA Dye Concentrate	No specific data.
DNA 12000 Marker	No specific data.
DNA 12000 Ladder	No specific data.

Ingestion :

DNA 12000 Gel Matrix	No specific data.
DNA Dye Concentrate	No specific data.
DNA 12000 Marker	No specific data.
DNA 12000 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 12000 Gel Matrix	No known significant effects or critical hazards.
DNA Dye Concentrate	No known significant effects or critical hazards.
DNA 12000 Marker	No known significant effects or critical hazards.
DNA 12000 Ladder	No known significant effects or critical hazards.

Carcinogenicity :

DNA 12000 Gel Matrix	No known significant effects or critical hazards.
DNA Dye Concentrate	No known significant effects or critical hazards.
DNA 12000 Marker	No known significant effects or critical hazards.
DNA 12000 Ladder	No known significant effects or critical hazards.

Mutagenicity :

DNA 12000 Gel Matrix	No known significant effects or critical hazards.
DNA Dye Concentrate	No known significant effects or critical hazards.
DNA 12000 Marker	No known significant effects or critical hazards.
DNA 12000 Ladder	No known significant effects or critical hazards.

Reproductive toxicity :

DNA 12000 Gel Matrix	No known significant effects or critical hazards.
DNA Dye Concentrate	No known significant effects or critical hazards.
DNA 12000 Marker	No known significant effects or critical hazards.
DNA 12000 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)
DNA Dye Concentrate Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
DNA Dye Concentrate Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water Acute LC50 34000000 µg/l Fresh water Chronic NOEC 100 ul/L Marine water Chronic NOEC 100 ul/L Fresh water	Daphnia - *Daphnia magna* - Neonate Fish - *Pimephales promelas* Algae - *Ulva lactuca* Daphnia - *Daphnia magna* - Juvenile (Fledgling, Hatchling, Weanling)	48 hours 96 hours 72 hours 21 days

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

Bioaccumulative potential

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

Mobility in soil

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

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

TDG / IMDG / IATA : Not regulated.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

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

Canada : Not determined.

United States : Not determined.

Section 16. Other information

History

Date of issue/Date of revision : 12/26/2023

Date of previous issue : 09/19/2020

Version : 7

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

Procedure used to derive the classification

Section 16. Other information

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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