

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 12000 Gel Matrix Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10%
 Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%
 Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: 1 - 10%
 DNA 12000 Marker Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10%
 Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%
 Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: 1 - 10%

2.2 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 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.
 DNA 12000 Marker Not applicable.
 DNA 12000 Ladder Not applicable.

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 attention.
 DNA 12000 Marker Not applicable.
 DNA 12000 Ladder Not applicable.

Storage : DNA 12000 Gel Matrix Not applicable.
 DNA Dye Concentrate P403 - Store in a well-ventilated place.
 P235 - Keep cool.
 DNA 12000 Marker Not applicable.
 DNA 12000 Ladder Not applicable.

Disposal :

Section 2. Hazards identification

	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate	Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	DNA 12000 Marker DNA 12000 Ladder	Not applicable. Not applicable.
Supplemental label elements	: <input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	None known. None known. None known. None known.
2.3 Other hazards		
Hazards not otherwise classified	: <input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	None known. None known. None known. None known.

Section 3. Composition/information on ingredients

Substance/mixture	: <input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	Mixture Mixture Mixture Mixture
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Ingredient name	%	CAS number
<input checked="" type="checkbox"/> 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	: <input checked="" type="checkbox"/> 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.

Section 4. First aid measures

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.

Ingestion

: DNA 12000 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 occurs, the head should be kept low so that vomit

Section 4. First aid measures

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

Section 4. First aid measures

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.

4.3 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

5.1 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.
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.

5.2 Special hazards arising from the substance or mixture

Section 5. Fire-fighting measures

Specific hazards arising from the chemical

: DNA 12000 Gel Matrix
DNA Dye Concentrate

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.

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.

5.3 Advice for firefighters

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


6.1 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

Section 6. Accidental release measures

	DNA 12000 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 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).

6.3 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

7.1 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.

Section 7. Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

: DNA 12000 Gel Matrix

Storage temperature: 4°C (39.2°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in 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 12000 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 12000 Ladder

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

7.3 Specific end use(s)

Recommendations

: DNA 12000 Gel Matrix
DNA Dye Concentrate
DNA 12000 Marker
DNA 12000 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	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix	Not applicable.
	DNA Dye Concentrate	Not applicable.
	DNA 12000 Marker	Not applicable.
	DNA 12000 Ladder	Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
<input checked="" type="checkbox"/> DNA Dye Concentrate Dimethyl sulfoxide	AIHA WEEL (United States, 10/2011). 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	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Liquid. Liquid. Liquid. Liquid.
Color	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. Blue. Not available. Not available.
Odor	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. Not available. Not available. Not available.
Odor threshold	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. Not available. Not available. Not available.
pH	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. Not available. Not available. Not available.
Melting point	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. 18.5°C (65.3°F) 0°C (32°F) 0°C (32°F)
Boiling point	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. 189°C (372.2°F) 100°C (212°F) 100°C (212°F)
Flash point	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. Closed cup: 87°C (188.6°F) Not available. Not available.
Evaporation rate	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. Not available. Not available. Not available.
Flammability (solid, gas)	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not applicable. Not applicable. Not applicable. Not applicable.
Lower and upper explosive (flammable) limits	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. Lower: 2.6% Upper: 42% Not available. Not available.
Vapor pressure	:	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix <input checked="" type="checkbox"/> DNA Dye Concentrate <input checked="" type="checkbox"/> DNA 12000 Marker <input checked="" type="checkbox"/> DNA 12000 Ladder	Not available. Not available. Not available. Not available.
Vapor density	:		

Section 9. Physical and chemical properties

	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	Not available. 2.7 [Air = 1] Not available. Not available.
Relative density	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	Not available. Not available. Not available. Not available.
Solubility	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	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	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	Not available. Not available. Not available. Not available.
Auto-ignition temperature	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	Not available. Not available. Not available. Not available.
Decomposition temperature	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	Not available. Not available. Not available. Not available.
Viscosity	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	Not available. Not available. Not available. Not available.

Section 10. Stability and reactivity

10.1 Reactivity	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 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	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	The product is stable. The product is stable. The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	<input checked="" type="checkbox"/> DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 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

hazardous reactions will not occur.

10.4 Conditions to avoid :  DNA 12000 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 12000 Marker
DNA 12000 Ladder

No specific data.
No specific data.

10.5 Incompatible materials :  DNA 12000 Gel Matrix
DNA Dye Concentrate

May react or be incompatible with oxidizing materials.

DNA 12000 Marker

Reactive or incompatible with the following materials:

DNA 12000 Ladder

oxidizing materials

May react or be incompatible with oxidizing materials.

May react or be incompatible with oxidizing materials.

10.6 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

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

Section 11. Toxicological information

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

: DNA 12000 Gel Matrix
DNA Dye Concentrate

DNA 12000 Marker
DNA 12000 Ladder

Not available.

Routes of entry anticipated: Oral, Dermal,
Inhalation.

Not available.

Not available.

Potential acute health effects

Eye contact

: DNA 12000 Gel Matrix
DNA Dye Concentrate
DNA 12000 Marker
DNA 12000 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.

No known significant effects or critical hazards.

Inhalation

: DNA 12000 Gel Matrix
DNA Dye Concentrate
DNA 12000 Marker
DNA 12000 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 12000 Gel Matrix
DNA Dye Concentrate
DNA 12000 Marker
DNA 12000 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 12000 Gel Matrix
DNA Dye Concentrate
DNA 12000 Marker
DNA 12000 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.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

: DNA 12000 Gel Matrix
DNA Dye Concentrate

No specific data.

Adverse symptoms may include the following:
irritation

watering

redness

DNA 12000 Marker

No specific data.

DNA 12000 Ladder

No specific data.

Section 11. Toxicological information

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.

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.
Teratogenicity	: 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.
Developmental effects	: 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.
Fertility effects	: 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

Not available.

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

12.2 Persistence and degradability

Not available.

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 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

Classification	:	DNA 12000 Gel Matrix DNA Dye Concentrate DNA 12000 Marker DNA 12000 Ladder	Not applicable. Fire hazard Immediate (acute) health hazard Not applicable. Not applicable.
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Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
DNA Dye Concentrate Dimethyl sulfoxide	≥90	Yes.	No.	No.	Yes.	No.

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, SULFINYLBI-

Section 15. Regulatory information

Pennsylvania : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: Not determined.
Japan	: <input checked="" type="checkbox"/> Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: <input checked="" type="checkbox"/> Not determined.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: <input checked="" type="checkbox"/> Not determined.
United States	: <input checked="" type="checkbox"/> Not determined.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

Section 16. Other information

History

Date of issue : 10/27/2017

Date of previous issue : 03/31/2015.

Version : 5

Indicates information that has changed from previously issued version.

Notice to reader

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