Conforms to US OSHA Hazard Communication 29CFR1910.1200

SAFETY DATA SHEET

Agilent Technologies

Agilent RNA 6000 Nano Reagents, Part Number 5067-1512

Section 1. Identification

1.1 Product identifier

Product name : Agilent RNA 6000 Nano Reagents, Part Number 5067-1512

Part no. (chemical kit) : 5067-1512

Part no. :

Reagents RNA Nano	G2938-80023
RNA 6000 Nano Gel Matrix	Not available.
RNA Nano Dye Concentrate	Not available.
RNA 6000 Nano Marker	Not available.
RNA 6000 Nano ladder	G2938-80038
RNA 6000 Nano Ladder	Not available.

Validation date : 9/27/2023

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

Identified uses : Analytical chemistry.
Research and Development

RNA 6000 Nano Gel Matrix	2 x 1.2 ml
RNA Nano Dye Concentrate	1 x 0.035 ml
RNA 6000 Nano Marker	2 x 1.2 ml
RNA 6000 Nano 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 :

RNA 6000 Nano 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.
RNA Nano Dye Concentrate	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
RNA 6000 Nano 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.
RNA 6000 Nano 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

RNA Nano Dye Concentrate

H320 EYE IRRITATION - Category 2B

2.2 GHS label elements

Signal word	RNA 6000 Nano Gel Matrix	No signal word.
	RNA Nano Dye Concentrate	Warning
	RNA 6000 Nano Marker	No signal word.
	RNA 6000 Nano Ladder	No signal word.
Hazard statements	RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
	RNA Nano Dye Concentrate	H320 - Causes eye irritation.
	RNA 6000 Nano Marker	No known significant effects or critical hazards.
	RNA 6000 Nano Ladder	No known significant effects or critical hazards.

Precautionary statements

Prevention	RNA 6000 Nano Gel Matrix	Not applicable.
	RNA Nano Dye Concentrate	Not applicable.
	RNA 6000 Nano Marker	Not applicable.
	RNA 6000 Nano Ladder	Not applicable.
Response	RNA 6000 Nano Gel Matrix	Not applicable.
	RNA Nano 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.
	RNA 6000 Nano Marker	Not applicable.
	RNA 6000 Nano Ladder	Not applicable.
Storage	RNA 6000 Nano Gel Matrix	Not applicable.
	RNA Nano Dye Concentrate	Not applicable.
	RNA 6000 Nano Marker	Not applicable.
	RNA 6000 Nano Ladder	Not applicable.
Disposal	RNA 6000 Nano Gel Matrix	Not applicable.
	RNA Nano Dye Concentrate	Not applicable.
	RNA 6000 Nano Marker	Not applicable.
	RNA 6000 Nano Ladder	Not applicable.
Supplemental label elements	RNA 6000 Nano Gel Matrix	None known.
	RNA Nano Dye Concentrate	None known.
	RNA 6000 Nano Marker	None known.
	RNA 6000 Nano Ladder	None known.

2.3 Other hazards

Hazards not otherwise classified	RNA 6000 Nano Gel Matrix	None known.
	RNA Nano Dye Concentrate	None known.
	RNA 6000 Nano Marker	None known.
	RNA 6000 Nano Ladder	None known.

Section 3. Composition/information on ingredients

Substance/mixture	RNA 6000 Nano Gel Matrix	Mixture
	RNA Nano Dye Concentrate	Mixture
	RNA 6000 Nano Marker	Mixture
	RNA 6000 Nano Ladder	Mixture

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
RNA Nano 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 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 :

RNA 6000 Nano 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.

RNA Nano 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.

RNA 6000 Nano 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.

RNA 6000 Nano 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 :

RNA 6000 Nano Gel Matrix: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

RNA Nano 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.

RNA 6000 Nano Marker: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

RNA 6000 Nano Ladder: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact :

RNA 6000 Nano Gel Matrix: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

RNA Nano 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

Section 4. First aid measures

			before reuse.
		RNA 6000 Nano Marker	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		RNA 6000 Nano Ladder	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:	RNA 6000 Nano 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.
		RNA Nano 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.
		RNA 6000 Nano 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.
		RNA 6000 Nano Ladder	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
		RNA Nano Dye Concentrate	Causes eye irritation.
		RNA 6000 Nano Marker	No known significant effects or critical hazards.
		RNA 6000 Nano Ladder	No known significant effects or critical hazards.
Inhalation	:	RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
		RNA Nano Dye Concentrate	No known significant effects or critical hazards.
		RNA 6000 Nano Marker	No known significant effects or critical hazards.
		RNA 6000 Nano Ladder	No known significant effects or critical hazards.
Skin contact	:	RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
		RNA Nano Dye Concentrate	No known significant effects or critical hazards.
		RNA 6000 Nano Marker	No known significant effects or critical hazards.
		RNA 6000 Nano Ladder	No known significant effects or critical hazards.
Ingestion	:	RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
		RNA Nano Dye Concentrate	No known significant effects or critical hazards.
		RNA 6000 Nano Marker	No known significant effects or critical hazards.
		RNA 6000 Nano Ladder	No known significant effects or critical hazards.

Section 4. First aid measures

Over-exposure signs/symptoms

Eye contact	:	RNA 6000 Nano Gel Matrix	No specific data.
		RNA Nano Dye Concentrate	Adverse symptoms may include the following: irritation watering redness
		RNA 6000 Nano Marker	No specific data.
		RNA 6000 Nano Ladder	No specific data.
Inhalation	:	RNA 6000 Nano Gel Matrix	No specific data.
		RNA Nano Dye Concentrate	No specific data.
		RNA 6000 Nano Marker	No specific data.
		RNA 6000 Nano Ladder	No specific data.
Skin contact	:	RNA 6000 Nano Gel Matrix	No specific data.
		RNA Nano Dye Concentrate	No specific data.
		RNA 6000 Nano Marker	No specific data.
		RNA 6000 Nano Ladder	No specific data.
Ingestion	:	RNA 6000 Nano Gel Matrix	No specific data.
		RNA Nano Dye Concentrate	No specific data.
		RNA 6000 Nano Marker	No specific data.
		RNA 6000 Nano Ladder	No specific data.

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

Notes to physician	:	RNA 6000 Nano Gel Matrix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		RNA Nano Dye Concentrate	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		RNA 6000 Nano Marker	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		RNA 6000 Nano Ladder	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	:	RNA 6000 Nano Gel Matrix	No specific treatment.
		RNA Nano Dye Concentrate	No specific treatment.
		RNA 6000 Nano Marker	No specific treatment.
		RNA 6000 Nano Ladder	No specific treatment.
Protection of first-aiders	:	RNA 6000 Nano Gel Matrix	No action shall be taken involving any personal risk or without suitable training.
		RNA Nano 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.
		RNA 6000 Nano Marker	No action shall be taken involving any personal risk or without suitable training.
		RNA 6000 Nano 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 :	RNA 6000 Nano Gel Matrix	Use an extinguishing agent suitable for the surrounding fire.
	RNA Nano Dye Concentrate	Use an extinguishing agent suitable for the surrounding fire.
	RNA 6000 Nano Marker	Use an extinguishing agent suitable for the surrounding fire.
	RNA 6000 Nano Ladder	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media :	RNA 6000 Nano Gel Matrix	None known.
	RNA Nano Dye Concentrate	None known.
	RNA 6000 Nano Marker	None known.
	RNA 6000 Nano Ladder	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical :	RNA 6000 Nano Gel Matrix	In a fire or if heated, a pressure increase will occur and the container may burst.
	RNA Nano Dye Concentrate	In a fire or if heated, a pressure increase will occur and the container may burst.
	RNA 6000 Nano Marker	In a fire or if heated, a pressure increase will occur and the container may burst.
	RNA 6000 Nano Ladder	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products :	RNA 6000 Nano Gel Matrix	No specific data.
	RNA Nano Dye Concentrate	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	RNA 6000 Nano Marker	No specific data.
	RNA 6000 Nano Ladder	No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters :	RNA 6000 Nano 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.
	RNA Nano 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.
	RNA 6000 Nano 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.
	RNA 6000 Nano Ladder	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters :	RNA 6000 Nano 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.
	RNA Nano 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.

Section 5. Fire-fighting measures

RNA 6000 Nano Marker	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
RNA 6000 Nano 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 :

RNA 6000 Nano 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.
RNA Nano 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
RNA 6000 Nano 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.
RNA 6000 Nano 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 :

RNA 6000 Nano 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".
RNA Nano 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".
RNA 6000 Nano 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".
RNA 6000 Nano 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".

Section 6. Accidental release measures

6.2 Environmental precautions :

RNA 6000 Nano 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).
RNA Nano 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).
RNA 6000 Nano 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).
RNA 6000 Nano 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 :

RNA 6000 Nano 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.
RNA Nano Dye Concentrate	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.
RNA 6000 Nano 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.
RNA 6000 Nano 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 :

RNA 6000 Nano Gel Matrix	Put on appropriate personal protective equipment (see Section 8).
RNA Nano 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. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do

Section 7. Handling and storage

			not reuse container.
		RNA 6000 Nano Marker	Put on appropriate personal protective equipment (see Section 8).
		RNA 6000 Nano Ladder	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	:	RNA 6000 Nano 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.
		RNA Nano 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.
		RNA 6000 Nano 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.
		RNA 6000 Nano 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	:	RNA 6000 Nano 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.
		RNA Nano Dye Concentrate	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.
		RNA 6000 Nano 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

Section 7. Handling and storage

RNA 6000 Nano Ladder	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. 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	:	RNA 6000 Nano Gel Matrix	Industrial applications, Professional applications.
		RNA Nano Dye Concentrate	Industrial applications, Professional applications.
		RNA 6000 Nano Marker	Industrial applications, Professional applications.
		RNA 6000 Nano Ladder	Industrial applications, Professional applications.
Industrial sector specific solutions	:	RNA 6000 Nano Gel Matrix	Not available.
		RNA Nano Dye Concentrate	Not available.
		RNA 6000 Nano Marker	Not available.
		RNA 6000 Nano Ladder	Not available.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

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

Biological exposure indices

No exposure indices known.

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

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 :	RNA 6000 Nano Gel Matrix	Liquid.
	RNA Nano Dye Concentrate	Liquid.
	RNA 6000 Nano Marker	Liquid.
	RNA 6000 Nano Ladder	Liquid.
Color :	RNA 6000 Nano Gel Matrix	Not available.
	RNA Nano Dye Concentrate	Blue.
	RNA 6000 Nano Marker	Not available.
	RNA 6000 Nano Ladder	Not available.
Odor :	RNA 6000 Nano Gel Matrix	Not available.
	RNA Nano Dye Concentrate	Not available.
	RNA 6000 Nano Marker	Not available.
	RNA 6000 Nano Ladder	Not available.
Odor threshold :	RNA 6000 Nano Gel Matrix	Not available.
	RNA Nano Dye Concentrate	Not available.
	RNA 6000 Nano Marker	Not available.
	RNA 6000 Nano Ladder	Not available.
pH :	RNA 6000 Nano Gel Matrix	Not available.
	RNA Nano Dye Concentrate	Not available.
	RNA 6000 Nano Marker	Not available.
	RNA 6000 Nano Ladder	Not available.
Melting point/freezing point :	RNA 6000 Nano Gel Matrix	0°C (32°F)
	RNA Nano Dye Concentrate	18.4°C (65.1°F)
	RNA 6000 Nano Marker	0°C (32°F)
	RNA 6000 Nano Ladder	0°C (32°F)

Section 9. Physical and chemical properties and safety characteristics

Boiling point, initial boiling point, and boiling range :

RNA 6000 Nano Gel Matrix	100°C (212°F)
RNA Nano Dye Concentrate	189°C (372.2°F)
RNA 6000 Nano Marker	100°C (212°F)
RNA 6000 Nano Ladder	100°C (212°F)

Flash point :

RNA 6000 Nano Gel Matrix	Not available.
RNA Nano Dye Concentrate	Closed cup: 94°C (201.2°F)
RNA 6000 Nano Marker	Not available.
RNA 6000 Nano Ladder	Not available.

Evaporation rate :

RNA 6000 Nano Gel Matrix	Not available.
RNA Nano Dye Concentrate	Not available.
RNA 6000 Nano Marker	Not available.
RNA 6000 Nano Ladder	Not available.

Flammability :

RNA 6000 Nano Gel Matrix	Not applicable.
RNA Nano Dye Concentrate	Not applicable.
RNA 6000 Nano Marker	Not applicable.
RNA 6000 Nano Ladder	Not applicable.

Lower and upper explosion limit/flammability limit :

RNA 6000 Nano Gel Matrix	Not available.
RNA Nano Dye Concentrate	Not available.
RNA 6000 Nano Marker	Not available.
RNA 6000 Nano 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
RNA 6000 Nano Gel Matrix						
water	17.5	2.3	-	92.258	12.3	-
RNA Nano Dye Concentrate						
Dimethyl sulfoxide	0.42	0.056	EU A.4	-	-	-
RNA 6000 Nano Marker						
water	17.5	2.3	-	92.258	12.3	-
RNA 6000 Nano Ladder						
water	17.5	2.3	-	92.258	12.3	-

Relative vapor density :

RNA 6000 Nano Gel Matrix	Not available.
RNA Nano Dye Concentrate	Not available.
RNA 6000 Nano Marker	Not available.
RNA 6000 Nano Ladder	Not available.

Relative density :

RNA 6000 Nano Gel Matrix	Not available.
RNA Nano Dye Concentrate	Not available.
RNA 6000 Nano Marker	Not available.
RNA 6000 Nano Ladder	Not available.

Section 9. Physical and chemical properties and safety characteristics

Solubility(ies) :

Media	Result
RNA 6000 Nano Gel Matrix	
water	Soluble
RNA Nano Dye Concentrate	
water	Soluble
RNA 6000 Nano Marker	
water	Soluble
RNA 6000 Nano Ladder	
water	Soluble

Partition coefficient: n-octanol/water :

RNA 6000 Nano Gel Matrix	Not applicable.
RNA Nano Dye Concentrate	Not applicable.
RNA 6000 Nano Marker	Not applicable.
RNA 6000 Nano Ladder	Not applicable.

Auto-ignition temperature :

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

Decomposition temperature :

RNA 6000 Nano Gel Matrix	Not available.
RNA Nano Dye Concentrate	Not available.
RNA 6000 Nano Marker	Not available.
RNA 6000 Nano Ladder	Not available.

Viscosity :

RNA 6000 Nano Gel Matrix	Not available.
RNA Nano Dye Concentrate	Not available.
RNA 6000 Nano Marker	Not available.
RNA 6000 Nano Ladder	Not available.

Particle characteristics

Median particle size :

RNA 6000 Nano Gel Matrix	Not applicable.
RNA Nano Dye Concentrate	Not applicable.
RNA 6000 Nano Marker	Not applicable.
RNA 6000 Nano Ladder	Not applicable.

Section 10. Stability and reactivity

10.1 Reactivity :

RNA 6000 Nano Gel Matrix	No specific test data related to reactivity available for this product or its ingredients.
RNA Nano Dye Concentrate	No specific test data related to reactivity available for this product or its ingredients.
RNA 6000 Nano Marker	No specific test data related to reactivity available for this product or its ingredients.
RNA 6000 Nano Ladder	No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability :

RNA 6000 Nano Gel Matrix	The product is stable.
RNA Nano Dye Concentrate	The product is stable.
RNA 6000 Nano Marker	The product is stable.
RNA 6000 Nano Ladder	The product is stable.

10.3 Possibility of hazardous reactions :

RNA 6000 Nano Gel Matrix	Under normal conditions of storage and use, hazardous reactions will not occur.
RNA Nano Dye Concentrate	Under normal conditions of storage and use, hazardous reactions will not occur.
RNA 6000 Nano Marker	Under normal conditions of storage and use, hazardous reactions will not occur.
RNA 6000 Nano Ladder	Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

10.4 Conditions to avoid :

RNA 6000 Nano Gel Matrix	No specific data.
RNA Nano Dye Concentrate	No specific data.
RNA 6000 Nano Marker	No specific data.
RNA 6000 Nano Ladder	No specific data.

10.5 Incompatible materials :

RNA 6000 Nano Gel Matrix	May react or be incompatible with oxidizing materials.
RNA Nano Dye Concentrate	May react or be incompatible with oxidizing materials.
RNA 6000 Nano Marker	May react or be incompatible with oxidizing materials.
RNA 6000 Nano Ladder	May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products :

RNA 6000 Nano Gel Matrix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
RNA Nano Dye Concentrate	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
RNA 6000 Nano Marker	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
RNA 6000 Nano 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
RNA Nano 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
RNA Nano 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

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Section 11. Toxicological information

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	:	RNA 6000 Nano Gel Matrix	Not available.
		RNA Nano Dye Concentrate	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
		RNA 6000 Nano Marker	Not available.
		RNA 6000 Nano Ladder	Not available.

Potential acute health effects

Eye contact	:	RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
		RNA Nano Dye Concentrate	Causes eye irritation.
		RNA 6000 Nano Marker	No known significant effects or critical hazards.
		RNA 6000 Nano Ladder	No known significant effects or critical hazards.
Inhalation	:	RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
		RNA Nano Dye Concentrate	No known significant effects or critical hazards.
		RNA 6000 Nano Marker	No known significant effects or critical hazards.
		RNA 6000 Nano Ladder	No known significant effects or critical hazards.
Skin contact	:	RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
		RNA Nano Dye Concentrate	No known significant effects or critical hazards.
		RNA 6000 Nano Marker	No known significant effects or critical hazards.
		RNA 6000 Nano Ladder	No known significant effects or critical hazards.
Ingestion	:	RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
		RNA Nano Dye Concentrate	No known significant effects or critical hazards.
		RNA 6000 Nano Marker	No known significant effects or critical hazards.
		RNA 6000 Nano Ladder	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:	RNA 6000 Nano Gel Matrix	No specific data.
		RNA Nano Dye Concentrate	Adverse symptoms may include the following: irritation watering redness
		RNA 6000 Nano Marker	No specific data.
		RNA 6000 Nano Ladder	No specific data.
Inhalation	:	RNA 6000 Nano Gel Matrix	No specific data.
		RNA Nano Dye Concentrate	No specific data.
		RNA 6000 Nano Marker	No specific data.
		RNA 6000 Nano Ladder	No specific data.
Skin contact	:	RNA 6000 Nano Gel Matrix	No specific data.
		RNA Nano Dye Concentrate	No specific data.
		RNA 6000 Nano Marker	No specific data.
		RNA 6000 Nano Ladder	No specific data.
Ingestion	:	RNA 6000 Nano Gel Matrix	No specific data.
		RNA Nano Dye Concentrate	No specific data.
		RNA 6000 Nano Marker	No specific data.
		RNA 6000 Nano Ladder	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Section 11. Toxicological information

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	: RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
	RNA Nano Dye Concentrate	No known significant effects or critical hazards.
	RNA 6000 Nano Marker	No known significant effects or critical hazards.
	RNA 6000 Nano Ladder	No known significant effects or critical hazards.
Carcinogenicity	: RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
	RNA Nano Dye Concentrate	No known significant effects or critical hazards.
	RNA 6000 Nano Marker	No known significant effects or critical hazards.
	RNA 6000 Nano Ladder	No known significant effects or critical hazards.
Mutagenicity	: RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
	RNA Nano Dye Concentrate	No known significant effects or critical hazards.
	RNA 6000 Nano Marker	No known significant effects or critical hazards.
	RNA 6000 Nano Ladder	No known significant effects or critical hazards.
Reproductive toxicity	: RNA 6000 Nano Gel Matrix	No known significant effects or critical hazards.
	RNA Nano Dye Concentrate	No known significant effects or critical hazards.
	RNA 6000 Nano Marker	No known significant effects or critical hazards.
	RNA 6000 Nano 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)
RNA Nano Dye Concentrate Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
RNA Nano 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 ul/L Marine water	Algae - *Ulva lactuca*	72 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - *Daphnia magna* - Juvenile (Fledgling, Hatchling, Weanling)	21 days

12.2 Persistence and degradability

Section 12. Ecological information

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

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

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
RNA Nano 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 IMO instruments : Not available.

Section 15. Regulatory information

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

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

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

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

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 :

RNA 6000 Nano Gel Matrix	Not applicable.
RNA Nano Dye Concentrate	EYE IRRITATION - Category 2B
RNA 6000 Nano Marker	Not applicable.
RNA 6000 Nano Ladder	Not applicable.

Composition/information on ingredients

Name	%	Classification
RNA Nano Dye Concentrate Dimethyl sulfoxide	≥90	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

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

Pennsylvania : None of the components are listed.

California Prop. 65

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

International regulations

Section 15. Regulatory information

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 : All components are listed or exempted.

Canada : All components are listed or exempted.

China : Not determined.

Japan : **Japan inventory (CSCL)**: All components are listed or exempted.
Japan inventory (ISHL): All components are listed or exempted.

New Zealand : All components are listed or exempted.

Philippines : Not determined.

Republic of Korea : Not determined.

Taiwan : All components are listed or exempted.

Thailand : Not determined.

Turkey : Not determined.

United States : Not determined.

Viet Nam : Not determined.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
RNA Nano Dye Concentrate EYE IRRITATION - Category 2B	Calculation method

History

Date of issue/Date of revision : 09/27/2023

Date of previous issue : 08/07/2020

Version : 8

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

Indicates information that has changed from previously issued version.

Section 16. Other information

Notice to reader

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