

# SAFETY DATA SHEET

Universal Human Reference RNA, Part Number 740000

## Section 1. Identification

### 1.1 Product identifier

**Product name** : Universal Human Reference RNA, Part Number 740000  
**Part no. (chemical kit)** : 740000  
**Part no.** : RNase Free Water 740000-42  
 Universal Human Reference RNA 740000-41  
**Validation date** : 2/23/2022

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

**Material uses** : Analytical reagent.  
 RNase Free Water 1.5 ml  
 Universal Human Reference RNA 3.6 ml (2 x 1.8 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** : RNase Free Water  
 Universal Human Reference RNA

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.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

**Universal Human Reference RNA**  
 H225 FLAMMABLE LIQUIDS - Category 2  
 H319 EYE IRRITATION - Category 2A

### 2.2 GHS label elements

**Hazard pictograms** : Universal Human Reference RNA



**Signal word** : RNase Free Water No signal word.  
 Universal Human Reference RNA Danger

**Hazard statements** : RNase Free Water No known significant effects or critical hazards.  
 Universal Human Reference RNA H225 - Highly flammable liquid and vapor.  
 H319 - Causes serious eye irritation.

### Precautionary statements

**Date of issue** : 02/23/2022

1/16

## Section 2. Hazards identification

<b>Prevention</b>	: <input checked="" type="checkbox"/> RNase Free Water Universal Human Reference RNA	Not applicable. P280 - Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating or lighting equipment. P242 - Use non-sparking tools. P243 - Take action to prevent static discharges. P233 - Keep container tightly closed.
<b>Response</b>	: <input checked="" type="checkbox"/> RNase Free Water Universal Human Reference RNA	Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
<b>Storage</b>	: <input checked="" type="checkbox"/> RNase Free Water Universal Human Reference RNA	Not applicable. P403 + P235 - Store in a well-ventilated place. Keep cool.
<b>Disposal</b>	: RNase Free Water Universal Human Reference RNA	Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	: RNase Free Water Universal Human Reference RNA	None known. None known.
<b>2.3 Other hazards</b>		
<b>Hazards not otherwise classified</b>	: RNase Free Water Universal Human Reference RNA	None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: RNase Free Water Universal Human Reference RNA	Substance Mixture
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Ingredient name	%	CAS number
<input checked="" type="checkbox"/> RNase Free Water Water	100	7732-18-5
Universal Human Reference RNA Ethanol	≥50 - ≤75	64-17-5

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

## Section 4. First aid measures

<b>Eye contact</b>	: RNase Free Water  Universal Human Reference RNA	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.  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. Get medical attention.
<b>Inhalation</b>	: RNase Free Water  Universal Human Reference RNA	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.  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.
<b>Skin contact</b>	: RNase Free Water  Universal Human Reference RNA	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.  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.
<b>Ingestion</b>	: RNase Free Water  Universal Human Reference RNA	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.  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.

### 4.2 Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	: RNase Free Water Universal Human Reference RNA	No known significant effects or critical hazards. Causes serious eye irritation.
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## Section 4. First aid measures

<b>Inhalation</b>	: RNase Free Water Universal Human Reference RNA	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: RNase Free Water Universal Human Reference RNA	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: RNase Free Water Universal Human Reference RNA	No known significant effects or critical hazards. No known significant effects or critical hazards.

### Over-exposure signs/symptoms

<b>Eye contact</b>	: RNase Free Water Universal Human Reference RNA	No specific data. Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: RNase Free Water Universal Human Reference RNA	No specific data. No specific data.
<b>Skin contact</b>	: RNase Free Water Universal Human Reference RNA	No specific data. No specific data.
<b>Ingestion</b>	: RNase Free Water Universal Human Reference RNA	No specific data. No specific data.

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

<b>Notes to physician</b>	: RNase Free Water  Universal Human Reference RNA	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	: RNase Free Water Universal Human Reference RNA	No specific treatment. No specific treatment.
<b>Protection of first-aiders</b>	: RNase Free Water  Universal Human Reference RNA	No action shall be taken involving any personal risk or without suitable training. 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.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: RNase Free Water  Universal Human Reference RNA	Use an extinguishing agent suitable for the surrounding fire. Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
<b>Unsuitable extinguishing media</b>	: RNase Free Water Universal Human Reference RNA	None known. Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

<b>Specific hazards arising from the chemical</b>	: RNase Free Water  Universal Human Reference RNA	In a fire or if heated, a pressure increase will occur and the container may burst. Highly flammable liquid and vapor. 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.
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## Section 5. Fire-fighting measures

**Hazardous thermal decomposition products** : RNase Free Water  
 Universal Human Reference RNA

No specific data.  
 Decomposition products may include the following materials:  
 carbon dioxide  
 carbon monoxide

### 5.3 Advice for firefighters

**Special protective actions for fire-fighters** : RNase Free Water  
 Universal Human Reference RNA

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** : RNase Free Water  
 Universal Human Reference RNA

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.

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

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** : RNase Free Water  
 Universal Human Reference RNA

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.

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.

**For emergency responders** : RNase Free Water  
 Universal Human Reference RNA

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".

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

<b>6.2 Environmental precautions</b>	: RNase Free Water	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).
	Universal Human Reference RNA	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

<b>Methods for cleaning up</b>	: RNase Free Water	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.
	Universal Human Reference RNA	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.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	: RNase Free Water	Put on appropriate personal protective equipment (see Section 8).
	Universal Human Reference RNA	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. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
<b>Advice on general occupational hygiene</b>	: RNase Free Water	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.
	Universal Human Reference RNA	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

## Section 7. Handling and storage

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

: RNase Free Water

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.

Universal Human Reference RNA

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.

### 7.3 Specific end use(s)

#### Recommendations

: RNase Free Water  
Universal Human Reference RNA

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

#### Industrial sector specific solutions

: RNase Free Water  
Universal Human Reference RNA

Not available.  
Not available.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
RNase Free Water Water  Universal Human Reference RNA Ethanol	None.  <b>ACGIH TLV (United States, 1/2021).</b> STEL: 1000 ppm 15 minutes. <b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 1000 ppm 8 hours. TWA: 1900 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2020).</b> TWA: 1000 ppm 10 hours. TWA: 1900 mg/m <sup>3</sup> 10 hours. <b>OSHA PEL (United States, 5/2018).</b> TWA: 1000 ppm 8 hours. TWA: 1900 mg/m <sup>3</sup> 8 hours.

## Section 8. Exposure controls/personal protection

### 8.2 Exposure controls

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

**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

<b>Physical state</b>	: RNase Free Water	Liquid.
	Universal Human Reference RNA	Liquid.
<b>Color</b>	: RNase Free Water	Colorless.
	Universal Human Reference RNA	Not available.
<b>Odor</b>	: RNase Free Water	Odorless.
	Universal Human Reference RNA	Not available.
<b>Odor threshold</b>	: RNase Free Water	Not available.
	Universal Human Reference RNA	Not available.



## Section 9. Physical and chemical properties and safety characteristics

- pH** : RNase Free Water 7  
 Universal Human Reference RNA Not available.
- Melting point/freezing point** : RNase Free Water 0°C (32°F)  
 Universal Human Reference RNA Not available.
- Boiling point, initial boiling point, and boiling range** : RNase Free Water 100°C (212°F)  
 Universal Human Reference RNA 78°C (172.4°F)
- Flash point** :  RNase Free Water Not available.  
 Universal Human Reference RNA Closed cup: 20 to 23°C (68 to 73.4°F)
- Evaporation rate** : RNase Free Water Not available.  
 Universal Human Reference RNA Not available.
- Flammability** : RNase Free Water Not applicable.  
 Universal Human Reference RNA Not applicable.
- Lower and upper explosion limit/flammability limit** : RNase Free Water Not available.  
 Universal Human Reference RNA Not available.
- Vapor pressure** :  RNase Free Water 3.2 kPa (23.8 mm Hg) [room temperature]  
 12.3 kPa (92.258 mm Hg) [50°C (122°F)]  
 Universal Human Reference RNA Not available.

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
<input checked="" type="checkbox"/> Universal Human Reference RNA						
Ethanol	42.95	5.7				
Water	23.8	3.2		92.258	12.3	

- Relative vapor density** : RNase Free Water 0.62 [Air = 1]  
 Universal Human Reference RNA Not available.
- Relative density** : RNase Free Water 1  
 Universal Human Reference RNA Not available.
- Solubility** : RNase Free Water Easily soluble in the following materials: cold water and hot water.  
 Universal Human Reference RNA Easily soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** :  RNase Free Water -1.38  
 Universal Human Reference RNA Not applicable.
- Auto-ignition temperature** : RNase Free Water Not applicable.  
 Universal Human Reference RNA Not available.

Ingredient name	°C	°F	Method
<input checked="" type="checkbox"/> Universal Human Reference RNA			
Edetic acid	>400	>752	VDI 2263
Ethanol	455	851	DIN 51794

- Decomposition temperature** : RNase Free Water Not available.  
 Universal Human Reference RNA Not available.
- Viscosity** : RNase Free Water Not available.  
 Universal Human Reference RNA Not available.

**Particle characteristics**

- Median particle size** :  RNase Free Water Not applicable.  
 Universal Human Reference RNA Not applicable.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: RNase Free Water Universal Human Reference RNA	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.
<b>10.2 Chemical stability</b>	: RNase Free Water Universal Human Reference RNA	The product is stable. The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: RNase Free Water Universal Human Reference RNA	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: RNase Free Water Universal Human Reference RNA	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.
<b>10.5 Incompatible materials</b>	: RNase Free Water Universal Human Reference RNA	May react or be incompatible with oxidizing materials. Reactive or incompatible with the following materials: oxidizing materials
<b>10.6 Hazardous decomposition products</b>	: RNase Free Water Universal Human Reference RNA	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Universal Human Reference RNA Ethanol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	124700 mg/m <sup>3</sup> 7 g/kg	4 hours -

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Universal Human Reference RNA Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	100 uL	-

#### Sensitization

Not available.

## Section 11. Toxicological information

### Mutagenicity

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Classification

Product/ingredient name	OSHA	IARC	NTP
Universal Human Reference RNA Ethanol	-	1	-

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : RNase Free Water Universal Human Reference RNA : Not available.  
Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

**Eye contact** : RNase Free Water Universal Human Reference RNA : No known significant effects or critical hazards. Causes serious eye irritation.

**Inhalation** :  RNase Free Water Universal Human Reference RNA : No known significant effects or critical hazards.

**Skin contact** :  RNase Free Water Universal Human Reference RNA : No known significant effects or critical hazards.

**Ingestion** :  RNase Free Water Universal Human Reference RNA : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : RNase Free Water Universal Human Reference RNA : No specific data.  
Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

**Inhalation** :  RNase Free Water Universal Human Reference RNA : No specific data.

**Skin contact** :  RNase Free Water Universal Human Reference RNA : No specific data.

**Ingestion** : RNase Free Water Universal Human Reference RNA : No specific data.

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

#### Short term exposure

## Section 11. Toxicological information

**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** : RNase Free Water Universal Human Reference RNA No known significant effects or critical hazards.

Universal Human Reference RNA No known significant effects or critical hazards.

**Carcinogenicity** : RNase Free Water Universal Human Reference RNA No known significant effects or critical hazards.

Universal Human Reference RNA No known significant effects or critical hazards.

**Mutagenicity** : RNase Free Water Universal Human Reference RNA No known significant effects or critical hazards.

Universal Human Reference RNA No known significant effects or critical hazards.

**Reproductive toxicity** :  RNase Free Water Universal Human Reference RNA No known significant effects or critical hazards.

Universal Human Reference RNA 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)
Universal Human Reference RNA Ethanol	7000	N/A	N/A	124.7	N/A

**Other information** : RNase Free Water Universal Human Reference RNA Not available. Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> Universal Human Reference RNA Ethanol	Acute EC50 3306 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 1074 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 5680 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 11000000 µg/l Marine water	Fish - Alburnus alburnus	96 hours
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 µl/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days

### 12.2 Persistence and degradability

## Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
RNase Free Water Water	-	-	Readily
Universal Human Reference RNA Ethanol	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
RNase Free Water Water	-1.38	-	low
Universal Human Reference RNA Ethanol	-0.35	0.5	low

### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : 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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. 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 Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1170	UN1170	UN1170	UN1170	UN1170
UN proper shipping name	Ethanol solutions	ETHANOL SOLUTION	ETANOL EN SOLUCION	ETHANOL SOLUTION	Ethanol solution
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.

### Additional information

- DOT Classification** : **Limited quantity** Yes.  
**Packaging instruction** Exceptions: 4b, 150. Non-bulk: 202. Bulk: 242.  
**Quantity limitation** Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.  
**Special provisions** 24, IB2, T4, TP1
- TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).  
**Explosive Limit and Limited Quantity Index** 1  
**Passenger Carrying Road or Rail Index** 5  
**Special provisions** 150
- Mexico Classification** : **Special provisions** 144
- IMDG** : **Emergency schedules** F-E, S-D  
**Special provisions** 144
- IATA** : **Quantity limitation** Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.  
**Special provisions** A3, A58, A180  
**Remarks** Excepted Quantity
- 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 Water Act (CWA) 311:** Edetic acid
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed
- Clean Air Act Section 602 Class I Substances** : Not listed

## Section 15. Regulatory information

**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** :  Not applicable.  
 FLAMMABLE LIQUIDS - Category 2  
 EYE IRRITATION - Category 2A  
 Universal Human Reference RNA

#### Composition/information on ingredients

Name	%	Classification
<input checked="" type="checkbox"/> Universal Human Reference RNA Ethanol	≥50 - ≤75	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A HNOC - Defatting irritant

### State regulations

**Massachusetts** :  The following components are listed: ETHYL ALCOHOL; ETHANOL; DENATURED ALCOHOL

**New York** : None of the components are listed.

**New Jersey** :  The following components are listed: ETHYL ALCOHOL; METHYLCARBINOL; ETHANOL; ALCOHOL

**Pennsylvania** :  The following components are listed: ETHANOL; DENATURED ALCOHOL

### California Prop. 65

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

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

**Australia** : All components are listed or exempted.

**Canada** : All components are listed or exempted.

**China** : All components are listed or exempted.

**Europe** : All components are listed or exempted.

## Section 15. Regulatory information

<b>Japan</b>	: <b>Japan inventory (CSCL):</b> All components are listed or exempted. <b>Japan inventory (ISHL):</b> All components are listed or exempted.
<b>New Zealand</b>	: All components are listed or exempted.
<b>Philippines</b>	: All components are listed or exempted.
<b>Republic of Korea</b>	: All components are listed or exempted.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: <input checked="" type="checkbox"/> All components are listed or exempted.
<b>Turkey</b>	: All components are listed or exempted.
<b>United States</b>	: <input checked="" type="checkbox"/> All components are active or exempted.
<b>Viet Nam</b>	: <input checked="" type="checkbox"/> All components are listed or exempted.

## Section 16. Other information

### Procedure used to derive the classification

Classification	Justification
<input checked="" type="checkbox"/> <b>Universal Human Reference RNA</b> FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A	On basis of test data Calculation method

### History

<b>Date of issue</b>	: 02/23/2022
<b>Date of previous issue</b>	: 08/13/2019
<b>Version</b>	: 7

### Key to abbreviations

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

Indicates information that has changed from previously issued version.

### Notice to reader

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