Conforms to US OSHA Hazard Communication 29CFR1910.1200

SAFETY DATA SHEET

Agilent Technologies

FISH Hybridization Buffer and Mounting Buffer

Section 1. Identification

1.1 Product identifier

Product name : FISH Hybridization Buffer and Mounting Buffer

Part no. (chemical kit) : G9407A, G9408A

Part no. : FISH Hybridization Buffer G9400-60000
FISH Mounting Buffer G9403-60000

Validation date : 2/22/2021

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

Material uses : Analytical reagent.

FISH Hybridization Buffer 0.1 ml
FISH Mounting Buffer 0.1 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 : FISH Hybridization Buffer — This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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

Classification of the substance or mixture

FISH Hybridization Buffer

H315	SKIN IRRITATION - Category 2
H319	EYE IRRITATION - Category 2A
H351	CARCINOGENICITY - Category 2
H360	TOXIC TO REPRODUCTION - Category 1B
H373	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

FISH Mounting Buffer

H320	EYE IRRITATION - Category 2B
H317	SKIN SENSITIZATION - Category 1
H412	AQUATIC HAZARD (LONG-TERM) - Category 3

FISH Hybridization Buffer — Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 65%

2.2 GHS label elements

Hazard pictograms : FISH Hybridization Buffer

FISH Mounting Buffer

Section 2. Hazards identification

Signal word	:	FISH Hybridization Buffer	Danger
		FISH Mounting Buffer	Warning
Hazard statements	:	FISH Hybridization Buffer	H315 - Causes skin irritation. H319 - Causes serious eye irritation. H351 - Suspected of causing cancer. H360 - May damage fertility or the unborn child. H373 - May cause damage to organs through prolonged or repeated exposure. (blood, Oral)
		FISH Mounting Buffer	H317 - May cause an allergic skin reaction. H320 - Causes eye irritation. H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention	:	FISH Hybridization Buffer	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection. P260 - Do not breathe vapor. P264 - Wash thoroughly after handling.
		FISH Mounting Buffer	P280 - Wear protective gloves. P273 - Avoid release to the environment. P261 - Avoid breathing vapor.
Response	:	FISH Hybridization Buffer	P308 + P313 - IF exposed or concerned: Get medical advice or attention.
		FISH Mounting Buffer	P363 - Wash contaminated clothing before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of water.
Storage	:	FISH Hybridization Buffer	Not applicable.
		FISH Mounting Buffer	Not applicable.
Disposal	:	FISH Hybridization Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		FISH Mounting Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	:	FISH Hybridization Buffer	None known.
		FISH Mounting Buffer	None known.

2.3 Other hazards

Hazards not otherwise classified	:	FISH Hybridization Buffer	None known.
		FISH Mounting Buffer	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	FISH Hybridization Buffer	Mixture
		FISH Mounting Buffer	Mixture

Ingredient name	%	CAS number
FISH Hybridization Buffer		
Formamide	≥50 - <66	75-12-7
Dextran sulfate sodium	≥10 - <20	9011-18-1
Sodium chloride	≤10	7647-14-5
FISH Mounting Buffer		
Glycerol	≥90	56-81-5
p-Phenylenediamine	<0.25	106-50-3

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 : FISH Hybridization Buffer

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.

FISH Mounting Buffer

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.

Inhalation : FISH Hybridization Buffer

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 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. 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.

FISH Mounting Buffer

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.

Skin contact : FISH Hybridization Buffer

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

FISH Mounting Buffer

Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : FISH Hybridization Buffer

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 does not enter the lungs. Get medical attention.

Section 4. First aid measures

		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.
	FISH Mounting Buffer	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 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

Eye contact	:	FISH Hybridization Buffer	Causes serious eye irritation.
		FISH Mounting Buffer	Causes eye irritation.
Inhalation	:	FISH Hybridization Buffer	No known significant effects or critical hazards.
		FISH Mounting Buffer	No known significant effects or critical hazards.
Skin contact	:	FISH Hybridization Buffer	Causes skin irritation.
		FISH Mounting Buffer	May cause an allergic skin reaction.
Ingestion	:	FISH Hybridization Buffer	No known significant effects or critical hazards.
		FISH Mounting Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	FISH Hybridization Buffer	Adverse symptoms may include the following: pain or irritation watering redness
		FISH Mounting Buffer	Adverse symptoms may include the following: irritation watering redness
Inhalation	:	FISH Hybridization Buffer	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
		FISH Mounting Buffer	No specific data.
Skin contact	:	FISH Hybridization Buffer	Adverse symptoms may include the following: irritation redness reduced fetal weight increase in fetal deaths skeletal malformations
		FISH Mounting Buffer	Adverse symptoms may include the following: irritation redness
Ingestion	:	FISH Hybridization Buffer	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
		FISH Mounting Buffer	No specific data.

Section 4. First aid measures

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

Notes to physician	:	FISH Hybridization Buffer	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.
		FISH Mounting Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	:	FISH Hybridization Buffer	No specific treatment.
		FISH Mounting Buffer	No specific treatment.
Protection of first-aiders	:	FISH Hybridization Buffer	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
		FISH Mounting Buffer	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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	FISH Hybridization Buffer	Use an extinguishing agent suitable for the surrounding fire.
		FISH Mounting Buffer	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	FISH Hybridization Buffer	None known.
		FISH Mounting Buffer	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	:	FISH Hybridization Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
		FISH Mounting Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	:	FISH Hybridization Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds metal oxide/oxides
		FISH Mounting Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide

Section 5. Fire-fighting measures

5.3 Advice for firefighters

Special protective actions for fire-fighters	:	FISH Hybridization Buffer	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.
		FISH Mounting Buffer	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	:	FISH Hybridization Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		FISH Mounting Buffer	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	:	FISH Hybridization Buffer	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.
		FISH Mounting Buffer	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.
For emergency responders	:	FISH Hybridization Buffer	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".
		FISH Mounting Buffer	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:		FISH Hybridization Buffer	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).
		FISH Mounting Buffer	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). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and materials for containment and cleaning up

Section 6. Accidental release measures

Methods for cleaning up	:	FISH Hybridization Buffer	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.
		FISH Mounting Buffer	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	:	FISH Hybridization Buffer	Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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 not reuse container.
		FISH Mounting Buffer	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. 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 not reuse container.
Advice on general occupational hygiene	:	FISH Hybridization Buffer	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.
		FISH Mounting Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities :

Section 7. Handling and storage

FISH Hybridization Buffer	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. Store locked up. 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.
FISH Mounting Buffer	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	:	FISH Hybridization Buffer	Industrial applications, Professional applications.
		FISH Mounting Buffer	Industrial applications, Professional applications.
Industrial sector specific solutions	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
FISH Hybridization Buffer	
Formamide	**ACGIH TLV (United States, 3/2020).** **Absorbed through skin.** TWA: 1 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 20 ppm 8 hours. TWA: 30 mg/m³ 8 hours. STEL: 30 ppm 15 minutes. STEL: 45 mg/m³ 15 minutes. **NIOSH REL (United States, 10/2016).** **Absorbed through skin.** TWA: 10 ppm 10 hours. TWA: 15 mg/m³ 10 hours.
Dextran sulfate sodium	None.
Sodium chloride	None.
FISH Mounting Buffer	
Glycerol	**OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust
p-Phenylenediamine	**ACGIH TLV (United States, 3/2020).** TWA: 0.1 mg/m³ 8 hours. **OSHA PEL 1989 (United States, 3/1989).**

Section 8. Exposure controls/personal protection

	Absorbed through skin. TWA: 0.1 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016).** **Absorbed through skin.** TWA: 0.1 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018).** **Absorbed through skin.** TWA: 0.1 mg/m³ 8 hours.

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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	:	FISH Hybridization Buffer	Liquid.
		FISH Mounting Buffer	Liquid.
Color	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Odor	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Odor threshold	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.

Section 9. Physical and chemical properties

pH	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	7.5 to 8
Melting point	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Boiling point	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Flash point	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Evaporation rate	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Flammability (solid, gas)	:	FISH Hybridization Buffer	Not applicable.
		FISH Mounting Buffer	Not applicable.
Lower and upper explosive (flammable) limits	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Vapor pressure	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Vapor density	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Relative density	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Solubility	:	FISH Hybridization Buffer	Easily soluble in the following materials: cold water and hot water.
		FISH Mounting Buffer	Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Auto-ignition temperature	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Decomposition temperature	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.
Viscosity	:	FISH Hybridization Buffer	Not available.
		FISH Mounting Buffer	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	:	FISH Hybridization Buffer	No specific test data related to reactivity available for this product or its ingredients.
		FISH Mounting Buffer	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	FISH Hybridization Buffer	The product is stable.
		FISH Mounting Buffer	The product is stable.
10.3 Possibility of hazardous reactions	:	FISH Hybridization Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
		FISH Mounting Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	FISH Hybridization Buffer	No specific data.
		FISH Mounting Buffer	No specific data.
10.5 Incompatible materials	:	FISH Hybridization Buffer	May react or be incompatible with oxidizing materials.
		FISH Mounting Buffer	May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity

10.6 Hazardous decomposition products

: FISH Hybridization Buffer — Under normal conditions of storage and use, hazardous decomposition products should not be produced.

FISH Mounting Buffer — 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
FISH Hybridization Buffer				
Formamide	LC50 Inhalation Dusts and mists	Rat - Male	>21 mg/l	4 hours
	LD50 Dermal	Rabbit	17 g/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
Dextran sulfate sodium	LD50 Oral	Rat	20600 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
FISH Mounting Buffer				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
p-Phenylenediamine	LC50 Inhalation Dusts and mists	Rat	920 mg/m³	4 hours
	LD50 Oral	Rat	80 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
FISH Hybridization Buffer					
Formamide	Eyes - Severe irritant	Rabbit	-	100 mg	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
FISH Mounting Buffer					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
p-Phenylenediamine	Skin - Mild irritant	Mouse	-	24 hours 250 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 12500 ug	-
	Skin - Moderate irritant	Rabbit	-	24 hours 250 mg	-
	Skin - Moderate irritant	Man	-	1 %	-

Sensitization

Not available.

Conclusion/Summary

Skin : May cause skin sensitization.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
FISH Mounting Buffer			
p-Phenylenediamine	-	3	-

Section 11. Toxicological information

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
FISH Hybridization Buffer Dextran sulfate sodium	Category 3	-	Respiratory tract irritation
FISH Mounting Buffer p-Phenylenediamine	Category 1 Category 3	-	heart, kidneys, muscle tissue Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
FISH Hybridization Buffer Formamide	Category 2	-	blood, Oral

Aspiration hazard

Not available.

Information on the likely routes of exposure :
- FISH Hybridization Buffer: Routes of entry anticipated: Oral, Dermal, Inhalation.
- FISH Mounting Buffer: Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact :
- FISH Hybridization Buffer: Causes serious eye irritation.
- FISH Mounting Buffer: Causes eye irritation.

Inhalation :
- FISH Hybridization Buffer: No known significant effects or critical hazards.
- FISH Mounting Buffer: No known significant effects or critical hazards.

Skin contact :
- FISH Hybridization Buffer: Causes skin irritation.
- FISH Mounting Buffer: May cause an allergic skin reaction.

Ingestion :
- FISH Hybridization Buffer: No known significant effects or critical hazards.
- FISH Mounting Buffer: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact :
- FISH Hybridization Buffer: Adverse symptoms may include the following:
  pain or irritation
  watering
  redness
- FISH Mounting Buffer: Adverse symptoms may include the following:
  irritation
  watering
  redness

Inhalation :
- FISH Hybridization Buffer: Adverse symptoms may include the following:
  reduced fetal weight
  increase in fetal deaths
  skeletal malformations
- FISH Mounting Buffer: No specific data.

Section 11. Toxicological information

Skin contact	:	FISH Hybridization Buffer	Adverse symptoms may include the following: irritation redness reduced fetal weight increase in fetal deaths skeletal malformations
		FISH Mounting Buffer	Adverse symptoms may include the following: irritation redness
Ingestion	:	FISH Hybridization Buffer	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
		FISH Mounting Buffer	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	:	FISH Hybridization Buffer	May cause damage to organs through prolonged or repeated exposure.
		FISH Mounting Buffer	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	:	FISH Hybridization Buffer	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
		FISH Mounting Buffer	No known significant effects or critical hazards.
Mutagenicity	:	FISH Hybridization Buffer	No known significant effects or critical hazards.
		FISH Mounting Buffer	No known significant effects or critical hazards.
Reproductive toxicity	:	FISH Hybridization Buffer	May damage fertility or the unborn child.
		FISH Mounting Buffer	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)
FISH Hybridization Buffer					
FISH Hybridization Buffer	6000	N/A	N/A	N/A	N/A
Formamide	4000	17000	N/A	N/A	N/A
Dextran sulfate sodium	20600	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A
FISH Mounting Buffer					
Glycerol	12600	N/A	N/A	N/A	N/A
p-Phenylenediamine	80	300	N/A	N/A	0.92

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
FISH Hybridization Buffer			
Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
FISH Mounting Buffer			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
p-Phenylenediamine	Acute LC50 3.9 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 0.00501 mg/l Fresh water	Daphnia - Daphnia magna	21 days

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
FISH Hybridization Buffer				
Formamide	OECD 301A Ready Biodegradability - DOC Die-Away Test	99 % - Readily - 28 days	-	-
FISH Mounting Buffer				
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
FISH Hybridization Buffer			
Formamide	-	-	Readily
FISH Mounting Buffer			
p-Phenylenediamine	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
FISH Hybridization Buffer			
Formamide	-0.82	-	low
FISH Mounting Buffer			
Glycerol	-1.76	-	low
p-Phenylenediamine	-0.839	-	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) PAIR**: Formamide

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Water Act (CWA) 311: Disodium hydrogenorthophosphate; Sodium hydroxide

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : 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.

Section 15. Regulatory information

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : FISH Hybridization Buffer

SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION - Category 1B

FISH Mounting Buffer

EYE IRRITATION - Category 2B
SKIN SENSITIZATION - Category 1

Composition/information on ingredients

Name	%	Classification
FISH Hybridization Buffer		
Formamide	≥50 - <66	EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 TOXIC TO REPRODUCTION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Dextran sulfate sodium	≥10 - <20	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Sodium chloride	≤10	EYE IRRITATION - Category 2A
FISH Mounting Buffer		
Glycerol	≥90	EYE IRRITATION - Category 2B
p-Phenylenediamine	<0.25	ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

State regulations

Massachusetts : The following components are listed: FORMAMIDE; GLYCERINE MIST

New York : None of the components are listed.

New Jersey : The following components are listed: FORMAMIDE; GLYCERIN; 1,2,3-PROPANETRIOL

Pennsylvania : The following components are listed: FORMAMIDE; 1,2,3-PROPANETRIOL

California Prop. 65

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

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : Not determined.

Canada : At least one component is not listed in DSL but all such components are listed in NDSL.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Section 15. Regulatory information

Japan	:	**Japan inventory (ENCS)**: Not determined. **Japan inventory (ISHL)**: Not determined.
New Zealand	:	All components are listed or exempted.
Philippines	:	Not determined.
Republic of Korea	:	All components are listed or exempted.
Taiwan	:	All components are listed or exempted.
Thailand	:	Not determined.
Turkey	:	Not determined.
United States	:	All components are active or exempted.
Viet Nam	:	Not determined.

Section 16. Other information

History

Date of issue	:	02/22/2021
Date of previous issue	:	03/13/2019
Version	:	5
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available UN = United Nations

Procedure used to derive the classification

Classification	Justification
FISH Hybridization Buffer	
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2A	Calculation method
CARCINOGENICITY - Category 2	Calculation method
TOXIC TO REPRODUCTION - Category 1B	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
FISH Mounting Buffer	
EYE IRRITATION - Category 2B	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method

Indicates information that has changed from previously issued version.

Notice to reader

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