

SAFETY DATA SHEET



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 : 2/29/2016

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

H319 EYE IRRITATION - Category 2A
 H360 TOXIC TO REPRODUCTION (Unborn child) - Category 1B

FISH Mounting Buffer

H320 EYE IRRITATION - Category 2B
 H317 SKIN SENSITIZATION - Category 1

Ingredients of unknown toxicity : FISH Hybridization Buffer Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 4.4%
 FISH Mounting Buffer Not applicable.

2.2 GHS label elements

Hazard pictograms



Signal word

: FISH Hybridization Buffer Danger
 FISH Mounting Buffer Warning

Section 2. Hazards identification

Hazard statements	: FISH Hybridization Buffer	GHS SYMBOL - Exclamation mark - Health hazard - H319 - Causes serious eye irritation. H360 - May damage the unborn child. H320 - Causes eye irritation. GHS SYMBOL - Exclamation mark - H317 - May cause an allergic skin reaction.
	FISH Mounting Buffer	
<u>Precautionary statements</u>		
Prevention	: FISH Hybridization Buffer	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P264 - Wash hands thoroughly after handling. P280 - Wear protective gloves. P261 - Avoid breathing vapor. P264 - Wash hands thoroughly after handling. P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace.
	FISH Mounting Buffer	
Response	: FISH Hybridization Buffer	P308 + P313 - IF exposed or concerned: Get medical attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention. P302 + P352 + P363 - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
	FISH Mounting Buffer	
Storage	: FISH Hybridization Buffer FISH Mounting Buffer	P405 - Store locked up. Not applicable.
Disposal	: FISH Hybridization Buffer FISH Mounting Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: FISH Hybridization Buffer FISH Mounting Buffer	None known. None known.
<u>2.3 Other hazards</u>		
Hazards not otherwise classified	: FISH Hybridization Buffer FISH Mounting Buffer	None known. 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 - ≤75	75-12-7
Sodium chloride	≤10	7647-14-5
FISH Mounting Buffer		
Glycerol	≥90	56-81-5
p-Phenylenediamine	≤0.3	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

Section 4. First aid measures

Skin contact	: FISH Hybridization Buffer	collar, tie, belt or waistband. 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. 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 FISH Mounting Buffer	Causes serious eye irritation. Causes eye irritation.
Inhalation	: FISH Hybridization Buffer FISH Mounting Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: FISH Hybridization Buffer FISH Mounting Buffer	No known significant effects or critical hazards. May cause an allergic skin reaction.

Section 4. First aid measures

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:
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.

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

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: FISH Hybridization Buffer FISH Mounting Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: FISH Hybridization Buffer FISH Mounting Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds metal oxide/oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters	: FISH Hybridization Buffer 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. 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 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. 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.
------------------------------------	-----------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Section 6. Accidental release measures

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". 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

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).

6.3 Methods and materials for containment and cleaning up

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 ingest. Avoid breathing vapor or mist. 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

Section 7. Handling and storage

	FISH Mounting Buffer	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. 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	: 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.
	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.
7.3 Specific end use(s)		
Recommendations	: FISH Hybridization Buffer FISH Mounting Buffer	Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: FISH Hybridization Buffer FISH Mounting Buffer	Not applicable. Not applicable.

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, 3/2015). Absorbed through skin. TWA: 10 ppm 8 hours. TWA: 18 mg/m ³ 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 20 ppm 8 hours. TWA: 30 mg/m ³ 8 hours. STEL: 30 ppm 15 minutes. STEL: 45 mg/m ³ 15 minutes. NIOSH REL (United States, 10/2013). Absorbed through skin. TWA: 10 ppm 10 hours. TWA: 15 mg/m ³ 10 hours.
Sodium chloride	None.
FISH Mounting Buffer Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust
p-Phenylenediamine	ACGIH TLV (United States, 3/2015). TWA: 0.1 mg/m ³ 8 hours. OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. TWA: 0.1 mg/m ³ 8 hours. NIOSH REL (United States, 10/2013). Absorbed through skin. TWA: 0.1 mg/m ³ 10 hours. OSHA PEL (United States, 2/2013). Absorbed through skin. TWA: 0.1 mg/m ³ 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

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

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: FISH Hybridization Buffer FISH Mounting Buffer	Liquid. Liquid.
Color	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Odor	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Odor threshold	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
pH	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. 7.5 to 8
Melting point	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Boiling point	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Flash point	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Evaporation rate	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Flammability (solid, gas)	: FISH Hybridization Buffer FISH Mounting Buffer	Not applicable. Not applicable.
Lower and upper explosive (flammable) limits	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.

Section 9. Physical and chemical properties

Vapor pressure	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Vapor density	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Relative density	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Solubility	: FISH Hybridization Buffer FISH Mounting Buffer	Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Auto-ignition temperature	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Decomposition temperature	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.
Viscosity	: FISH Hybridization Buffer FISH Mounting Buffer	Not available. Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: FISH Hybridization Buffer FISH Mounting Buffer	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: FISH Hybridization Buffer FISH Mounting Buffer	The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: FISH Hybridization Buffer FISH Mounting Buffer	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: FISH Hybridization Buffer FISH Mounting Buffer	No specific data. No specific data.
10.5 Incompatible materials	: FISH Hybridization Buffer FISH Mounting Buffer	May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.
10.6 Hazardous decomposition products	: FISH Hybridization Buffer FISH Mounting Buffer	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
FISH Hybridization Buffer Formamide	LD50 Dermal	Rabbit	17 g/kg	-
	LD50 Oral	Rat	4000 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/m ³	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 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
FISH Mounting Buffer Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
p-Phenylenediamine	Skin - Mild irritant	Mouse	-	24 hours 250 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 12500 Micrograms	-
	Skin - Moderate irritant	Rabbit	-	24 hours 250 milligrams	-
	Skin - Moderate irritant	Man	-	1 Percent	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

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

Reproductive toxicity

Not available.

Teratogenicity

Section 11. Toxicological information

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
FISH Mounting Buffer p-Phenylenediamine	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : FISH Hybridization Buffer
FISH Mounting Buffer

Routes of entry anticipated: Oral, Dermal, Inhalation.

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : FISH Hybridization Buffer
FISH Mounting Buffer

Causes serious eye irritation.

Causes eye irritation.

Inhalation : FISH Hybridization Buffer
FISH Mounting Buffer

No known significant effects or critical hazards.

No known significant effects or critical hazards.

Skin contact : FISH Hybridization Buffer
FISH Mounting Buffer

No known significant effects or critical hazards.

May cause an allergic skin reaction.

Ingestion : FISH Hybridization Buffer
FISH Mounting Buffer

No known significant effects or critical hazards.

No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : FISH Hybridization Buffer

FISH Mounting Buffer

Adverse symptoms may include the following:
pain or irritation

watering

redness

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

No specific data.

FISH Mounting Buffer

Skin contact : FISH Hybridization Buffer

Adverse symptoms may include the following:

reduced fetal weight

increase in fetal deaths

skeletal malformations

FISH Mounting Buffer

Adverse symptoms may include the following:

irritation

redness

Section 11. Toxicological information

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 FISH Mounting Buffer	No known significant effects or critical hazards. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: FISH Hybridization Buffer FISH Mounting Buffer	No known significant effects or critical hazards.
Mutagenicity	: FISH Hybridization Buffer FISH Mounting Buffer	No known significant effects or critical hazards.
Teratogenicity	: FISH Hybridization Buffer FISH Mounting Buffer	May damage the unborn child. No known significant effects or critical hazards.
Developmental effects	: FISH Hybridization Buffer FISH Mounting Buffer	No known significant effects or critical hazards.
Fertility effects	: FISH Hybridization Buffer FISH Mounting Buffer	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
FISH Hybridization Buffer Oral	6000 mg/kg

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
FISH Hybridization Buffer Sodium chloride	Acute EC50 2430000 µg/l Fresh water Acute EC50 28.85 mg/dm3 Fresh water Acute EC50 519.6 mg/l Fresh water Acute IC50 6.87 g/L Fresh water Acute LC50 1661 mg/l Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water	Algae - Navicula seminulum Algae - Pseudokirchneriella subcapitata Crustaceans - Cypris subglobosa Aquatic plants - Lemna minor Daphnia - Daphnia magna Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca -	96 hours 72 hours 48 hours 96 hours 48 hours 96 hours 3 weeks

Section 12. Ecological information

	Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 21 days 8 weeks
FISH Mounting Buffer Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

12.2 Persistence and degradability

Not available.

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

Regulatory information

DOT / IMDG / IATA : Not regulated.

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
 United States inventory (TSCA 8b): All components are listed or exempted.
 Clean Water Act (CWA) 311: Disodium hydrogenorthophosphate; Sodium hydroxide

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

Clean Air Act Section 602 : Not listed
 Class I Substances

Clean Air Act Section 602 : Not listed
 Class II Substances

DEA List I Chemicals : Not listed
 (Precursor Chemicals)

DEA List II Chemicals : Not listed
 (Essential Chemicals)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard
 Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
FISH Hybridization Buffer Formamide Sodium chloride	≥50 - ≤75 ≤10	No. No.	No. No.	No. No.	Yes. Yes.	Yes. No.
FISH Mounting Buffer Glycerol p-Phenylenediamine	≥90 ≤0.3	No. No.	No. No.	No. No.	Yes. Yes.	No. No.

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

No products were found.

Section 15. Regulatory information

- Canada inventory** : At least one component is not listed in DSL but all such components are listed in NDSL.
- International regulations**
- International lists** :
- Australia inventory (AICS)**: Not determined.
 - China inventory (IECSC)**: All components are listed or exempted.
 - Japan inventory (ENCS)**: Not determined.
 - Japan inventory (ISHL)**: Not determined.
 - Korea inventory**: All components are listed or exempted.
 - Malaysia Inventory (EHS Register)**: Not determined.
 - New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
 - Philippines inventory (PICCS)**: Not determined.
 - Taiwan Chemical Substances Inventory (TCSI)**: All components are listed or exempted.
 - Turkey inventory**: Not determined.
- Chemical Weapons Convention List Schedule I Chemicals** : Not listed
- Chemical Weapons Convention List Schedule II Chemicals** : Not listed
- Chemical Weapons Convention List Schedule III Chemicals** : Not listed

Section 16. Other information

History

- Date of issue** : 02/29/2016
- Date of previous issue** : 05/23/2014.
- Version** : 3

✔ Indicates information that has changed from previously issued version.

Notice to reader

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.