

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier**

**Product Name** Tissue Fixative 20X Concentrate

**Other means of identification**

**Product Code(s)** H102

**Synonyms** No information available

**Recommended use of the chemical and restrictions on use**

**Recommended Use** For Further Manufacturing Use Only.

**Uses advised against** Not for Human or Animal Drug Use

**Details of the supplier of the safety data sheet**

**Company Address**

VWR International, LLC  
 Radnor Corporate Center  
 100 Matsonford Road  
 Radnor, PA 19087-8660

**Manufacturer Address**

VWR International, LLC  
 28600 Fountain Parkway  
 Solon, Ohio 44139

**Company Phone Number**

1-800-448-4442

**E-mail Address**

info@amresco-inc.com

**Emergency Telephone Number**

**Emergency Telephone Number** Chemtrec 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

**Classification**

**OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Skin Sensitization	Category 1
Germ cell mutagenicity	Category 2

**Label elements**

**Emergency Overview**

**Danger**

**Hazard statements**

H302 - Harmful if swallowed  
 H315 - Causes skin irritation  
 H317 - May cause an allergic skin reaction  
 H318 - Causes serious eye damage  
 H330 - Fatal if inhaled  
 H341 - Suspected of causing genetic defects



**Appearance** Yellow haze-free

**Physical State** Solution

**Odor** No information available

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear respiratory protection  
Contaminated work clothing must not be allowed out of the workplace

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
Specific treatment is urgent (see .? on this label)  
Specific treatment (see .? on this label)  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTER or doctor  
IF ON SKIN: Wash with plenty of water and soap  
Take off contaminated clothing and wash it before reuse  
If skin irritation or rash occurs: Get medical advice/attention  
IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Immediately call a POISON CENTER or doctor  
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
Rinse mouth

**Precautionary Statements - Storage**

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not regulated

**Other Information**

- Harmful to aquatic life with long lasting effects
- Harmful to aquatic life

Unknown Acute Toxicity 9.26 % of the mixture consists of ingredient(s) of unknown toxicity

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS-No	EC No.	Weight %	Trade Secret
Glyoxal	107-22-2	203-474-9	10-20	Not applicable
Hydroxyacetic acid	79-14-1	201-180-5	5-10	Not applicable
Zinc sulfate, monohydrate	7446-19-7	-	1-5	Not applicable
Sodium hydroxide	1310-73-2	215-185-5	1-5	Not applicable
Benzoic acid,	5965-83-3	-	1-5	Not applicable

2-hydroxy-5-sulfo-, dihydrate				
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#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>Eye Contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
<b>Inhalation</b>	Move to fresh air. If not breathing, give artificial respiration.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. Rinse mouth.

##### Most important symptoms and effects, both acute and delayed

**Most Important Symptoms/Effects** No information available.

##### Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

##### Specific Hazards Arising from the Chemical

No information available.

##### Explosion Data

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

##### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions, protective equipment and emergency procedures

**Personal protection** Ensure adequate ventilation, especially in confined areas.

##### Environmental Precautions

**Environmental Precautions** See Section 12 for additional Ecological information.

##### Methods and material for containment and cleaning up

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up** Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

## 7. HANDLING AND STORAGE

### Precautions for Safe Handling

**Handling** Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Incompatible Products** Strong oxidizing agents. Strong acids.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Glyoxal 107-22-2	TWA: 0.1 mg/m <sup>3</sup>	-	-
Hydroxyacetic acid 79-14-1	-	-	-
Zinc sulfate, monohydrate 7446-19-7	-	-	-
Sodium hydroxide 1310-73-2	-	TWA: 2 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> Ceiling: 2 mg/m <sup>3</sup>
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-	-	-

#### Appropriate engineering controls

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

**Eye/Face Protection** Avoid contact with eyes. Safety glasses with side-shields.

**Skin and Body Protection** Wear protective gloves/clothing.

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solution	<b>Odor</b>	No information available
<b>Appearance</b>	Yellow haze-free	<b>Odor Threshold</b>	No information available
<b>Color</b>	No information available		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	No information available		
<b>Melting point/freezing point</b>	No information available		
<b>Boiling Point/Range</b>	No information available		
<b>Flash Point (High in °C)</b>	No information available		
<b>Evaporation Rate</b>	No information available		

<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
<b>Upper flammability limit:</b>	No information available
<b>Lower flammability limit:</b>	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor Density</b>	No information available
<b>Specific Gravity</b>	No information available
<b>Water Solubility</b>	No information available
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	No information available
<b>Kinematic viscosity</b>	No information available
<b>Dynamic viscosity</b>	No information available
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available

**Other Information**

<b>Softening Point</b>	No information available
<b>Molecular Weight</b>	No information available
<b>VOC Content</b>	No information available
<b>Density</b>	No information available
<b>Bulk Density</b>	No information available

**10. STABILITY AND REACTIVITY**

**Reactivity**

No data available

**Chemical Stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Conditions to Avoid**

Extremes of temperature and direct sunlight.

**Incompatible Materials**

Strong oxidizing agents. Strong acids.

**Hazardous Decomposition Products**

None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Product Information**

<b>Inhalation</b>	May be fatal if inhaled.
<b>Eye Contact</b>	May cause irreversible damage to eyes.
<b>Skin Contact</b>	Causes burns. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
<b>Ingestion</b>	Harmful if swallowed.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glyoxal 107-22-2	= 200 mg/kg ( Rat )	= 12700 mg/kg ( Rabbit )	= 2.44 mg/L ( Rat ) 4 h
Hydroxyacetic acid	= 1950 mg/kg ( Rat )	-	= 7100 µg/m <sup>3</sup> ( Rat ) 4 h

79-14-1			
Zinc sulfate, monohydrate 7446-19-7	-	-	-
Sodium hydroxide 1310-73-2	-	= 1350 mg/kg ( Rabbit )	-
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-	-	-

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Carcinogenicity** No information available.

Chemical Name	ACGIH	IARC	NTP	OSHA
Glyoxal 107-22-2	-	-	-	-
Hydroxyacetic acid 79-14-1	-	-	-	-
Zinc sulfate, monohydrate 7446-19-7	-	-	-	-
Sodium hydroxide 1310-73-2	-	-	-	-
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-	-	-	-

**Reproductive Toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

**Numerical measures of toxicity - Product Information**

**Unknown Acute Toxicity** 9.26 % of the mixture consists of ingredient(s) of unknown toxicity

**The following values are calculated based on chapter 3.1 of the GHS document .**

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

10.27% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Toxicity to Fish	Crustacea
Glyoxal 107-22-2	500: 72 h Desmodesmus subspicatus mg/L EC50 500: 96 h Desmodesmus subspicatus mg/L EC50 348.59: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	215: 96 h Pimephales promelas mg/L LC50 static 460 - 680: 96 h Leuciscus idus mg/L LC50 static	404: 48 h Daphnia magna mg/L EC50
Hydroxyacetic acid 79-14-1	-	5000: 96 h Brachydanio rerio mg/L LC50 static	-
Zinc sulfate, monohydrate 7446-19-7	-	-	-
Sodium hydroxide 1310-73-2	-	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	-
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-	-	-

**Persistence and Degradability**

No information available.

**Bioaccumulation/Accumulation**

No information available.

Chemical Name	Partition coefficient
Glyoxal 107-22-2	-0.85
Hydroxyacetic acid 79-14-1	-1.11
Zinc sulfate, monohydrate 7446-19-7	-
Sodium hydroxide 1310-73-2	-
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-

**Other Adverse Effects** No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste Disposal Method** Dispose of material in accordance with all federal, state, and local regulations.

**Contaminated Packaging** Do not re-use empty containers.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Glyoxal 107-22-2	-	-	-	-
Hydroxyacetic acid 79-14-1	-	-	-	-
Zinc sulfate, monohydrate 7446-19-7	-	-	-	-
Sodium hydroxide 1310-73-2	-	-	-	-
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-	-	-	-

Chemical Name	California Hazardous Waste Status
Glyoxal 107-22-2	-
Hydroxyacetic acid 79-14-1	-
Zinc sulfate, monohydrate 7446-19-7	Toxic
Sodium hydroxide 1310-73-2	-
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-

**14. TRANSPORT INFORMATION**

**DOT** Not regulated

**IATA** Not regulated

**15. REGULATORY INFORMATION**

**International Inventories**

<b>TSCA</b>	Does not comply
<b>DSL/NDSL</b>	Does not comply
<b>EINECS/ELINCS</b>	Does not Comply
<b>ENCS</b>	Does not Comply
<b>IECSC</b>	Complies
<b>KECL</b>	Does not Comply
<b>PICCS</b>	Complies
<b>AICS</b>	Complies

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

**U.S. Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

<b>Component</b>	<b>SARA 313 - Threshold Values %</b>
Glyoxal 107-22-2 ( 10-20 )	-
Hydroxyacetic acid 79-14-1 ( 5-10 )	-
Zinc sulfate, monohydrate 7446-19-7 ( 1-5 )	1.0
Sodium hydroxide 1310-73-2 ( 1-5 )	-
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3 ( 1-5 )	-

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

<b>Chemical Name</b>	<b>CWA - Reportable Quantities</b>	<b>CWA - Toxic Pollutants</b>	<b>CWA - Priority Pollutants</b>	<b>CWA - Hazardous Substances</b>
Glyoxal 107-22-2	-	-	-	-
Hydroxyacetic acid 79-14-1	-	-	-	-
Zinc sulfate, monohydrate 7446-19-7	-	X	-	-
Sodium hydroxide 1310-73-2	-	-	-	-
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-	-	-	-

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive



Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Glyoxal 107-22-2	-	-	-
Hydroxyacetic acid 79-14-1	-	-	-
Zinc sulfate, monohydrate 7446-19-7	-	-	-
Sodium hydroxide 1310-73-2	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-	-	-

**U.S. State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

Chemical Name	California Prop. 65
Glyoxal - 107-22-2	-
Hydroxyacetic acid - 79-14-1	-
Zinc sulfate, monohydrate - 7446-19-7	-
Sodium hydroxide - 1310-73-2	-
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate - 5965-83-3	-

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Glyoxal 107-22-2	X	-	-
Hydroxyacetic acid 79-14-1	-	-	-
Zinc sulfate, monohydrate 7446-19-7	-	X	-
Sodium hydroxide 1310-73-2	X	X	X
Benzoic acid, 2-hydroxy-5-sulfo-, dihydrate 5965-83-3	-	-	-

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not regulated

**16. OTHER INFORMATION**

**Issuing Date** 05-Sep-2012

**Revision Date** 08-Jan-2016

**Revision Note**

No information available

**Disclaimer**

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and its Affiliates shall not be held liable for any damage resulting from handling.

**End of Safety Data Sheet**