

# Safety Data Sheet



Revision Date: 7/29/2014

SDS #: SDS-10275-01

HistoMark® Blue

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Description:**

HistoMark® Blue

**Product Code**

55-70-00

**Kit Components:**

PhThalo BLUE Solution	71-00-03
Activator Solution	71-00-01
Buffered Substrate Solution	71-00-04
Contrast RED Solution	71-00-05

**Recommended Use** Kit (See Attached Safety Data Sheets For Components Listed Above)

**Contact Manufacturer** KPL, Inc.  
910 Clopper Road  
Gaithersburg, Maryland 20878  
USA

**Phone #:** 1-301-948-7755  
**Fax #:** 1-301-948-0169  
**Web:** [www.kpl.com](http://www.kpl.com)  
**Email:** [kplmsds@seracare.com](mailto:kplmsds@seracare.com)

**Emergency Telephone Numbers:**

AUSTRALIA – POISONS INFORMATION CENTER	Telephone: 13 11 26	Hours: 24 hours
CANADIAN TRANSPORT EMERGENCY CENTER	Telephone: (1 ) 613 996 6666	Hours: 24 hours/day, 7 days/week
UK – THE NATIONAL FOCUS	Telephone: (44) 029 2041 6388	Hours: 09:00-17:00 GMT
USA- NATIONAL RESPONSE CENTER	Telephone: (1 ) 800 424 8802	Hours: 24 hours/day, 7 days/week

**CHEMTREC:**

CHEMTREC Customer Number:- CCN12505\*  
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident  
Call CHEMTREC Day or Night  
Within USA and Canada: 1-800-424-9300 CCN12505 or  
+1 703-527-3887 (collect calls accepted)

# Safety Data Sheet



Revision Date: 6/30/2014

MSDS #: 10276

## HistoMark® PhThaloBLUE Solution

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Description:**

HistoMark® PhThaloBLUE Solution

**Product Code**

71-00-03

**Hazardous Reagent**

HistoMark® PhThaloBLUE Solution

**Hazardous Reagent Product code**

Catalog No. listed above

**Recommended Use** Reagent

**Contact Manufacturer** KPL, Inc.  
910 Clopper Road  
Gaithersburg, Maryland 20878  
USA

**Phone #:** 1-301-948-7755  
**Fax #:** 1-301-948-0169  
**Web:** www.kpl.com  
**Email:** kplmsds@seracare.com

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### 2. HAZARD IDENTIFICATION

**Hazard Type** Health Hazard: Data for 100% Diethylene Glycol: Harmful if swallowed, Causes damage to kidneys if swallowed, May cause drowsiness or dizziness

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

**Classification** Annex I Index# : 603-140-00-6  
Substance Name in Annex 1 : 2,2' -oxybisethanol diethylene glycol  
Classification: Acute Tox. 4

**Hazard Statement** H302 : Harmful if swallowed.

**Precautionary Statement** P264: Wash skin thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.

**Symbols of Danger** GHS07: Warning

**Data for 100% Hazardous Chemical**

ROUTES OF EXPOSURE:	The substance can be absorbed into the body by ingestion.
INHALATION RISK:	A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.
SHORT-TERM EXPOSURE	The substance may cause effects on the kidneys , resulting in kidney impairment The substance may cause effects on the central nervous system and liver by ingestion . Exposure by ingestion may result in death.
LONG-TERM EXPOSURE:	Not Available

<b>The product is a Mixture. It May Cause the following symptoms.</b>
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INGESTION: Abdominal pain. Nausea. Vomiting. Diarrhoea. Dizziness. Drowsiness. Confusion. Unconsciousness.

Direct contact with product may result in eye irritation.

Absorption through skin may occur. May cause irritation to the skin

May cause irritation to the respiratory tract.

May be harmful if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CHEMICAL</u>	<u>% Weight</u>	<u>CAS #:</u>
HistoMark® PhThaloBLUE Solution	2,2' -oxybisethanol	80%	111-46-6
	diethylene glycol		
	Hydrochloric Acid	3.3%	7647-01-0

Classification

Annex I Index# : 603-140-00-6

Substance Name in Annex 1 : 2,2' -oxybisethanol diethylene glycol

Classification: Acute Tox. 4

### 4. FIRST AID MEASURES

**Data for 100% Hazardous Chemical**

<b>Ingestion First Aid:</b>	Give one or two glasses of water to drink. Refer immediately for medical attention. See Notes. 007
<b>Inhalation First Aid:</b>	Fresh air, rest.
<b>Skin First Aid:</b>	Rinse skin with plenty of water or shower.
<b>Eye First Aid:</b>	Rinse with plenty of water (remove contact lenses if easily possible).

### 5. FIRE FIGHTING MEASURES

**Data For 100% Hazardous Chemical**

<b>Fire Acute Hazard:</b>	<b>Fire Prevention:</b>	<b>Fire Fighting:</b>
Combustible.	NO open flames.	Powder, alcohol-resistant foam, water spray, carbon dioxide .
<b>Explosion Acute Hazard:</b>		
Not Available	Not Available	Not Available

**CHEMICAL DANGERS:** Reacts violently with strong oxidants causing fire and explosion hazard. Attacks some forms of plastic.

**PHYSICAL DANGERS:** Not Available

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.
<b>Environmental Precautions</b>	Prevent further leakage or spillage if safe to do so. Should not be released into the environment.
<b>Method of Containment</b>	Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.
<b>Methods of Clean-up</b>	Wash away spilled liquid with plenty of water.
<b>Other Information</b>	Data for 100% Diethylene Glycol: Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance.

### Data for 100% Hazardous Chemical

<b>SPILLAGE</b>	Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Collect leaking liquid in sealable containers. Wash away spilled liquid with plenty of water.
<b>DISPOSAL</b>	

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Handle in accordance with good industrial hygiene and safety practice.
<b>Storage:</b>	Store at room temperature. Data for 100% Diethylene Glycol: Dry. Well closed. Separated from strong oxidants.

### Data for 100% Hazardous Chemical

<b>STORAGE</b>	Dry. Well closed. Separated from strong oxidants.
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## 8. EXPOSURE CONTROL

### Data for 100% Hazardous Chemical

<b>•INHALATION</b>	Ventilation.
<b>•EYES</b>	Safety spectacles.
<b>•SKIN</b>	Protective gloves.
<b>•INGESTION</b>	Do not eat, drink, or smoke during work.

<b>Engineering Controls</b>	<p>Appropriate engineering controls</p> <p>Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.</p> <p>Personal protective equipment:</p> <p>Eye/face protection - Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).</p> <p>Skin protection - Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.</p> <p>Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested: Dermatri® (KCL 740 / Aldrich Z677272, Size M) Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm</p>
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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear with a pink-brown tint solution	
<b>Physical State</b>	Liquid	<b>pH:</b> < 2.0

### Data for 100% Hazardous Chemical

Boiling point: 244 °C	Melting point: -6.5°C	Relative density (water = 1): 1.12 Temperature: 20 °C	Solubility in water: miscible	Vapour pressure, Pa at 20°C: 2.7	pH-VALUE: 6 - 8 Temperature: 20 °C Concentration: 200 g/l
Relative vapour density (air = 1): 3.7	Flash point: 124°C c.c.	Auto-ignition temperature: 229°C	Explosive limits, vol% in air: 1.6-10.8	Octanol/water partition coefficient as log Pow: -1.47	

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable under normal conditions
<b>Incompatibility Materials to Avoid</b>	Strong oxidants.
<b>Hazardous Decomposition Products</b>	Upon evaporation of water, toxic gases and vapors may be released if involved in a fire.
<b>Hazardous Polymerization</b>	Will not occur

### Data for 100% Hazardous Chemical

<b>CHEMICAL DANGERS:</b>	Reacts violently with strong oxidants causing fire and explosion hazard. Attacks some forms of plastic.
<b>PHYSICAL DANGERS:</b>	Not Available

## 11. TOXICOLOGY MEASURES

### Acute Toxicity

The toxicological risks are minor due to the low concentration of hazardous ingredients. The following toxicological information is for the hazardous ingredient in pure form.

<b>LD50 Oral</b>	LD50 oral rat: 12600 mg/kg Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 25, 1974.
<b>LD50 Dermal</b>	LD50 dermal rat/rabbit: 11900 mg/kg Species: Rabbit Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 25, 1974.
<b>LC50 Inhalation</b>	LC50 Fish (96 hours) Minimum: 75200 mg/l Maximum: 75200 mg/l Median: 75200 mg/l Study number: 1 Reference: Geiger, D.L., L.T. Brooke, and D.J. Call 1990. Acute Toxicities of Organic Chemicals to Fathead Minnows ( <i>Pimephales promelas</i> ), Volume 5. Ctr.for Lake Superior Environ.Stud., Univ.of Wisconsin-Superior, Superior, WI :332 p.

### Chronic Toxicity

<b>Carcinogenicity</b>	Not Applicable
<b>Irritation</b>	Data for 100% Diethylene Glycol: Eyes - rabbit   Result: No eye irritation
<b>Corrosivity</b>	Data for 100% Diethylene Glycol: Skin - rabbit   Result: No skin irritation (OECD Test Guideline 404)
<b>Sensitization</b>	Data for 100% Diethylene Glycol: Maximisation Test - guinea pig   Result: Did not cause sensitisation on lab
<b>Neurological Effects</b>	Not Available
<b>Mutagenic Effects</b>	Not Available
<b>Reproductive Effects</b>	Not Available
<b>Developmental Effects</b>	Not Available
<b>Target Organ Effects</b>	Data for 100% Diethylene Glycol: Kidneys, Central Nervous System and Liver
<b>Other adverse effects</b>	Not Available

## 12. ECOLOGICAL MEASURES

<b>Ecotoxicity</b>	Data for 100% 2,2' -oxybisethanol diethylene glycol : Aquatic Toxicity: > 32,000 ppm/96 hr/mosquito fish/TLm/ fresh water Waterfowl Toxicity: Currently not available Biological Oxygen Demand (BOD): 6%, 5 days
<b>Persistence/Degradability</b>	Data for 100% 2,2' -oxybisethanol diethylene glycol : Readily Biodegradable
<b>Mobility in Environmental Media</b>	Data for 100% 2,2' -oxybisethanol diethylene glycol : Using a structure estimation method based on molecular connectivity indices(1), the Koc of diethylene glycol can be estimated to be 1(SRC). According to a classification scheme(2), this estimated Koc value suggests that diethylene glycol is expected to have very high mobility in soil. [(1) Meylan WM et al; Environ Sci Technol 26: 1560-67 (1992) (2) Swann RL et al; Res Rev 85: 17-28 (1983)] **PEER REVIEWED**
<b>Bioaccumulation/ Accumulation</b>	Data for 100% 2,2' -oxybisethanol diethylene glycol : An estimated BCF of 3 was calculated in fish for diethylene glycol(SRC), using an estimated log Kow of -1.5(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC). [(1) Meylan WM, Howard PH; J Pharm Sci 84: 83-92 (1995) (2) Meylan WM et al; Environ Toxicol Chem 18: 664-72 (1999) (3) Franke C et al; Chemosphere 29: 1501-14 (1994)] **PEER REVIEWED**

## 13. DISPOSAL MEASURES

<b>Waste Disposal Method:</b>	Observe all Federal, State and Local laws concerning health and pollution. Data for 100% 2,2' -oxybisethanol diethylene glycol : Collection of small amounts of substance: Place in a collection container for halogen-free organic solvents and solutions of halogen-free organic substances. Collection vessels must be clearly labelled with a systematic description of their contents and with the hazard symbol and the R and S phrases. Store the vessels in a well-ventilated location. Entrust them to the appropriate authorities for disposal.
<b>Contaminated Packaging:</b>	Avoid contact with skin and clothing. Place contaminated packaging in a break proof outer vessel and dispose on in compliance with national and local regulations.
<b>US EPA Waste Number:</b>	EPA AEGL: Not listed

## 14. TRANSPORTATION MEASURES

<b>DOT:</b>	Not Regulated
<b>IATA:</b>	Not Regulated
<b>ADR (road)/ RID (rail):</b>	Not Regulated
<b>IMDG (sea):</b>	Not Regulated
<b>General Transport Regulations</b>	Data for 100% 2,2' -oxybisethanol diethylene glycol : Grades of Purity: Regular grade; polyester grade 7.2 Storage Temperature: Ambient Inert Atmosphere: No requirement Venting: Open (flame arrester) IMO Pollution Category: D Ship Type: Data not available Barge Hull Type: Currently not available

## 15. REGULATORY MEASURES

**This product is a mixture that may contain one or more hazardous chemicals. The hazardous ingredients listed are only those as required by 29 CFR 1910.1200 (OSHA HCS).**

### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains no chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372.

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (See 40 CFR 61)**

This product contains no chemical or chemicals which are subject to the reporting requirements of the Clean Air Act, Section 112 HAPS

### State Regulations

#### California Proposition 65:

This product contains the following Proposition 65 chemicals: None Listed

### State Right to Know Act

Chemical Name	2,2' -oxybisethanol diethylene glycol	Hydrochloric Acid
Massachusetts	Not Listed	Listed
New Jersey	Not Listed	Listed
Pennsylvania	Listed	Listed
New York	Not Listed	Listed
Rhode Island	Listed	Listed

### International Inventories

Chemical Name	2,2' -oxybisethanol diethylene glycol	Hydrochloric Acid
TSCA	Listed	Listed
DSL	Listed	Listed
NDSL	Not Listed	Not Listed
EINECS	Listed	Listed
CHINA	Listed	Listed
KECL	Listed	Listed
JAPAN:	Listed	Listed
AICS	Listed	Listed

### EU Regulations

<b>Annex I Index#</b>	Data for 100% 2,2'-oxydiethanol: 603-140-00-6
<b>Classification</b>	Annex I Index# : 603-140-00-6 Substance Name in Annex 1 : 2,2' -oxybisethanol diethylene glycol Classification: Acute Tox. 4
<b>Risk Phrases</b>	H302 : Harmful if swallowed.
<b>Safety Phrases</b>	P264: Wash skin thoroughly after handling. P270: Do not eat, drink or smoke when using this product.
<b>Symbols and Indications of Danger</b>	GHS07: Warning
<b>Specific Concentration Limits</b>	2,2' -oxybisethanol diethylene glycol: Not Available, Hydrochloric Acid: Skin Corr. 1B; H314: C ≥ 25 %   Skin Irrit. 2; H315: 10 % ≤ C < 25 %   Eye Irrit. 2; H319: 10 % ≤ C < 25 %   STOT SE 3; H335: C ≥ 10 %
<b>Export and Import</b>	This substance is not listed in the Annex I of Regulation (EC) No 689/2008.
<b>European Priority List</b>	This substance is not listed in a priority list (as foreseen under Council Regulation (EEC) No 793/93 on the evaluation and control of the risks of existing substances.).

## 16. OTHER INFORMATION

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. KPL shall not be held liable for any damage resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes. This material is sold for research purposes and is intended as laboratory reagents only. It is not intended for food, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals.

Revision Date: 6/30/2014

# Safety Data Sheet



Revision Date: 6/18/2015

SDS # SDS-10277-02

Histo, Activator Solution

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Description:**

**Product Code**

Histo, Activator Solution

71-00-01

**Hazardous Reagent**

Histo, Activator Solution

**Hazardous Reagent Product code**

Catalog No. listed above

**Recommended Use** Reagent

**Contact Manufacturer** KPL, Inc.  
910 Clopper Road  
Gaithersburg, Maryland 20878  
USA

**Phone #:** 1-301-948-7755

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+1 703-527-3887 (collect calls accepted)

## 2. HAZARD IDENTIFICATION

**Hazard Type** Health, Fire and Environmental Hazard

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

**Classification** Eye irritation, Category 2; H319  
Acute Tox. 4 H302  
Aquatic Acute 1: H400

**Hazard Statement** H301: Toxic if swallowed.  
H319: Causes serious eye irritation.  
H400: Very toxic to aquatic life.

**Precautionary Statement** P210: Keep away from heat/ sparks/ open flames/ hot surfaces. — No smoking.  
P220: Keep/ Store away from clothing/ combustible materials.  
P221: Take any precaution to avoid mixing with combustibles  
P280: Wear protective gloves/ protective clothing/ P301+P310: IF  
SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.

**Symbols of Danger** GHS06



GHS09  
Dgr: Danger

**Data for 100% Hazardous Chemical**

**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

**INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

**SHORT-TERM EXPOSURE:** The substance is irritating to the eyes. The substance may cause effects on the cardiovascular system and blood, resulting in lower blood pressure and the formation of methaemoglobin. Exposure may result in death. The effects may be delayed. Medical observation is indicated.

**LONG-TERM EXPOSURE:** Not Available

**The product is a Mixture. It May Cause the following symptoms.**

**EYES:** Redness. Pain.

**SKIN:** Not Available

**INHALATION:** Blue lips or finger nails. Blue skin. Confusion. Convulsions. Dizziness. Headache. Nausea. Unconsciousness.

**INGESTION:** Rapid pulse. (See Inhalation).

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CHEMICAL</u>	<u>% Weight</u>	<u>CAS #:</u>
Histo, Activator Solution	Sodium Nitrite	2%	7632-00-0

**Classification**

Eye irritation, Category 2; H319  
Acute Tox. 4 H302  
Aquatic Acute 1: H400

### 4. FIRST AID MEASURES

**Data for 100% Hazardous Chemical**

**Ingestion First Aid:** Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Give plenty of water to drink. Refer for medical attention.

**Inhalation First Aid:** Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.

**Skin First Aid:** First rinse with plenty of water, then remove contaminated clothes and rinse again.

**Eye First Aid:** First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.

### 5. FIRE FIGHTING MEASURES

**Data For 100% Hazardous Chemical**

<b>Fire Acute Hazard:</b>	<b>Fire Prevention:</b>	<b>Fire Fighting:</b>
Not combustible but enhances combustion of other substances. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.	NO contact with combustible substances.	In case of fire in the surroundings: use appropriate extinguishing media.
<b>Explosion Acute Hazard:</b>	Not Available	Not Available

**CHEMICAL DANGERS:** May explode on heating above 530°C. The substance decomposes on contact with acids producing toxic fumes ( nitrogen oxides ). The substance is a strong oxidant and reacts with combustible and reducing materials causing fire and explosion hazard. The solution in water is a weak base. Reacts with aluminium, ammonium compounds, amines.

**PHYSICAL DANGERS:** Not Available

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	<p>Take care to maintain clean working place.          The substance must not be present at workplaces in quantities above that required for work to be progressed.          Do not leave container open.          Use leak-proof equipment with exhaust for refilling or transfer.          Avoid spillage.          Fill only into labelled container.          Avoid any contact when handling the substance.          Avoid rising dust.          Do not transport together with incompatible substances.          Use an appropriate exterior vessel when transporting in fragile containers.</p>
<b>Environmental Precautions</b>	<p>Severe hazard to waters. Inform the responsible authorities when only small quantities get into water, drainage, sewer, or the ground.</p>
<b>Method of Containment</b>	<p>Collection of small amounts of substance:          Do not put/place waste into sink or dust bin.          Place in a collection container for salt solutions, adjust for a pH value of 6-8.          Collection vessels must be clearly labelled with a systematic description of their contents. Store the vessels in a well-ventilated location. Entrust them to the appropriate authorities for disposal.</p>
<b>Methods of Clean-up</b>	<p>Clean daily.          Use protective equipment while cleaning if necessary.          Avoid dust formation. Dust formation that cannot be avoided must be collected regularly.          Use a tested industrial vacuum cleaner or suction device.          Do not raise dust while cleaning.          Use of a blower for cleaning is not permitted.          Alternative: clean damp.          Only conduct maintenance and other work on or in the vessel or closed spaces after obtaining written permission.</p>
<b>Other Information</b>	Not Available

### Data for 100% Hazardous Chemical

**SPILLAGE DISPOSAL** Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. (Extra personal protection: P3 filter respirator for toxic p

## 7. HANDLING AND STORAGE

<b>Handling:</b>	<p>Wear appropriate PPE. Keep away from open flames. Observe the smoking prohibition! Absolutely no welding in the working area. Only work with vessels and lines after these have been thoroughly rinsed. Work done with fire or open flame should only be carried out with written permission if the risk of fire or explosion cannot be completely eliminated. Keep away from combustible materials.          Filter the solutions only with glass wool, glass chips, or ceramic filters. Do not use any filtration materials made of paper which risks ignition after drying. Do not leave any cleaning rags lying in the open. Empty bags containing any remnants tend to self ignite.</p>
<b>Storage:</b>	Store tightly capped at 2-8°C.

### Data for 100% Hazardous Chemical

**STORAGE** Separated from combustible and reducing substances, acids. Dry. Well closed.

## 8. EXPOSURE CONTROL

### Data for 100% Hazardous Chemical

• <b>INHALATION</b>	Local exhaust or breathing protection.
• <b>EYES</b>	Safety spectacles.
• <b>SKIN</b>	Protective gloves.
• <b>INGESTION</b>	Do not eat, drink, or smoke during work. Wash hands before eating.

**Engineering Controls** Ensure adequate ventilation, especially in confined areas

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	The solution should appear clear and may have a slight yellow tint.	
<b>Physical State</b>	Liquid	<b>pH:</b> Not Available

### Data for 100% Hazardous Chemical

Decomposes at 320°C  
 Decomposes at 280°C  
 Density: 2.2 g/cm<sup>3</sup>  
 Solubility in water,  
 g/100ml at 20°C: 82  
 Octanol/water partition  
 coefficient as log Pow: -  
 3.7

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable under normal conditions
<b>Incompatibility Materials to Avoid</b>	Separated from combustible substances, reducing agents and acids.
<b>Hazardous Decomposition Products</b>	Data for 100% Sodium Nitrite: At temperatures above 320 deg.C: nitrogen monoxide; nitrogen dioxide; disodium oxide
<b>Hazardous Polymerization</b>	Not Available.

### Data for 100% Hazardous Chemical

<b>CHEMICAL DANGERS:</b>	May explode on heating above 530°C. The substance decomposes on contact with acids producing toxic fumes ( nitrogen oxides ). The substance is a strong oxidant and reacts with combustible and reducing materials causing fire and explosion hazard. The solution in water is a weak base. Reacts with aluminium , ammonium compounds, amines .
<b>PHYSICAL DANGERS:</b>	Not Available

## 11. TOXICOLOGY MEASURES

### Acute Toxicity

The toxicological risks are minor due to the low concentration of hazardous ingredients. The following toxicological information is for the hazardous ingredient in pure form.

<b>LD50 Oral</b>	Data for 100% Sodium Nitrite: LD50 oral rat  Value: 180 mg/kg Reference: American Industrial Hygiene Association Journal. Vol. 30, Pg. 470, 1969.
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**LD50 Dermal** Not Available

**LC50 Inhalation** Data for 100% Sodium Nitrite: LC50 inhalation rat

Value: 0,0055 mg/l/4 h  
 Reference: Gigiena Truda i Professional'nye Zabolevaniya. Labor Hygiene and Occupational Diseases. Vol. 16(10), Pg. 36, 1972.

### Chronic Toxicity

**Carcinogenicity** Not Available

<b>Irritation</b>	Eye irritation, Category 2; H319
<b>Corrosivity</b>	Not Available
<b>Sensitization</b>	Not Available
<b>Neurological Effects</b>	Not Available
<b>Mutagenic Effects</b>	Not Available
<b>Reproductive Effects</b>	Not Available
<b>Developmental Effects</b>	Not Available
<b>Target Organ Effects</b>	Skin, Eyes, Gastrointestinal Tract
<b>Other adverse effects</b>	Acute toxicity, Category 3, oral; H301: : Toxic if swallowed.

## 12. ECOLOGICAL MEASURES

<b>Ecotoxicity</b>	<p>Data for 100% Sodium Nitrite: Very toxic to aquatic organisms LC50 Fish (96 hours)</p> <p>Minimum: 0,048 mg/l Maximum: 1260 mg/l Median: 0,675 mg/l</p> <p>Study number: 106</p> <p>Reference for median:</p> <p>Wedemeyer, G.A., and W.T. Yasutake 1978. Prevention and Treatment of Nitrite Toxicity in Juvenile Steelhead Trout (<i>Salmo gairdneri</i>). J.Fish.Res.Board Can.35(6):822-827 (Personal Communication Used); Russo, R.C., R.V. Thurston, and K. Emerson 1981. Acute Toxicity of Nitrite to Rainbow Trout (<i>Salmo gairdneri</i>): Effects of pH, Nitrite Species, and Anion Species. Can.J.Fish.Aquat.Sci. 38:387-393</p> <p>LC50 Crustaceans (48 hours)</p> <p>Minimum: 1,1 mg/l Maximum: 2660 mg/l Median: 35,1 mg/l</p> <p>Study number: 10</p> <p>Reference for median:</p> <p>Chen, J.C., and T.S. Chin 1988. Acute Toxicity of Nitrite to Tiger Prawn, <i>Penaeus monodon</i>, Larvae. Aquaculture 69(3/4):253-262; Meade, M.E., and S.A. Watts 1995. Toxicity of Ammonia, Nitrite, and Nitrate to Juvenile Australian Crayfish, <i>Cherax quadricarinatus</i>. J.Shellfish Res. 14(2):341-346</p>
<b>Persistence/Degradability</b>	Readily Degradable
<b>Mobility in Environmental Media</b>	Not Available
<b>Bioaccumulation/Accumulation</b>	Data for 100% Sodium Nitrite: Log Pow = -3,7   BCF = 11

## 13. DISPOSAL MEASURES

<b>Waste Disposal Method:</b>	Collection of small amounts of substance: Do not put/place waste into sink or dust bin. Place in a collection container for salt solutions, adjust for a pH value of 6-8. Collection vessels must be clearly labelled with a systematic description of their contents. Store the vessels in a well-ventilated location. Entrust them to the appropriate authorities for disposal.
<b>Contaminated Packaging:</b>	Avoid contact with skin and clothing. Place contaminated packaging in a break proof outer vessel and dispose on in compliance with national and local regulations.

US EPA Waste Number: Not Available

## 14. TRANSPORTATION MEASURES

DOT: Potassium nitrate and sodium nitrite mixtures 5.1  
UN1487

IATA: Not Available

ADR (road)/ RID (rail): Not Available

IMDG (sea): Not Available

General Transport Regulations Not Available

## 15. REGULATORY MEASURES

This product is a mixture that may contain one or more hazardous chemicals. The hazardous ingredients listed are only those as required by 29 CFR 1910.1200 q 2.C1.

### SARA 313

Sodium nitrite CAS 7632-00-0 CERCLA RQ: 100 Section 313: 313

### Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (See 40 CFR 61)

Not Listed

### State Regulations

#### California Proposition 65:

This product contains the following Proposition 65 chemicals: None Listed

### State Right to Know Act

Chemical Name	Sodium Nitrite
New Jersey	Listed
Pennsylvania	Listed
New York	Listed
Rhode Island	Listed

### International Inventories

Chemical Name	Sodium Nitrite
TSCA	Listed
DSL	Listed
NDSL	Not Listed
EINECS	Listed
CHINA	Listed
KECL	Listed
JAPAN:	Listed
AICS	Listed

### EU Regulations

<b>Annex I Index#</b>	Annex I Index# : 007-010-00-4 Substance Name in Annex 1 : sodium nitrite
<b>Classification</b>	Eye irritation, Category 2; H319 Acute Tox. 4 H302 Aquatic Acute 1: H400
<b>Risk Phrases</b>	H301: Toxic if swallowed. H319: Causes serious eye irritation. H400: Very toxic to aquatic life.
<b>Safety Phrases</b>	P210: Keep away from heat/ sparks/ open flames/ hot surfaces. — No smoking. P220: Keep/ Store away from clothing/ combustible materials.

P221: Take any precaution to avoid mixing with combustibles  
P280: Wear protective gloves/ protective clothing/ P301+P310: IF  
SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.

**Symbols and Indications  
of Danger**

GHS06  
GHS09  
Dgr: Danger

**Specific Concentration  
Limits**

Not Available.

**16. OTHER INFORMATION**

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. KPL shall not be held liable for any damage resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes. This material is sold for research purposes and is intended as laboratory reagents only. It is not intended for food, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals.

Revision Date: 6/18/2015

# Safety Data Sheet



Revision Date: 7/26/2014

Buffered Substrate Solution

SDS #: SDS-10278-01

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Description:**

Buffered Substrate Solution

**Product Code**

71-00-04

**Hazardous Reagent**

HISTO, BUFFERED SUBSTRATE

**Hazardous Reagent Product code**

Catalog No. listed above

**Recommended Use** Reagent

**Contact Manufacturer** KPL, Inc.  
910 Clopper Road  
Gaithersburg, Maryland 20878  
USA

**Phone #:** 1-301-948-7755

**Fax #:** 1-301-948-0169

**Web:** www.kpl.com

**Email:** kplmsds@seracare.com

**Emergency Telephone Numbers:**

AUSTRALIA – POISONS INFORMATION CENTER	Telephone: 13 11 26	Hours: 24 hours
CANADIAN TRANSPORT EMERGENCY CENTER	Telephone: (1 ) 613 996 6666	Hours: 24 hours/day, 7 days/week
UK – THE NATIONAL FOCUS	Telephone: (44) 029 2041 6388	Hours: 09:00-17:00 GMT
USA- NATIONAL RESPONSE CENTER	Telephone: (1 ) 800 424 8802	Hours: 24 hours/day, 7 days/week

**CHEMTREC:** CHEMTREC Customer Number:- CCN12505\*  
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident  
Call CHEMTREC Day or Night  
Within USA and Canada: 1-800-424-9300 CCN12505 or  
+1 703-527-3887 (collect calls accepted)

## 2. HAZARD IDENTIFICATION

<b>Hazard Type</b>	GHS Classification in accordance with 29 CFR 1910 (OSHA HCS): The product contains no substances which at their given concentration, are considered to be hazardous to health or the environment.
<b>Principle Route of Exposure</b>	Not Available
<b>Acute Effects: Eye:</b>	May cause redness and irritation
<b>Acute Effects: Skin:</b>	Dry skin and Irritation may occur
<b>Acute Effects: Inhalation:</b>	May be harmful if inhaled in very large quantities.
<b>Acute Effects: Ingestion:</b>	May be harmful if swallowed.
<b>Chronic Effects:</b>	Not Available
<b>Additional Information</b>	The product contains no substances which at their given concentration, are considered to be

hazardous to health

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CHEMICAL</u>	<u>% Weight</u>	<u>CAS #:</u>
Buffered Substrate Solution	Levamisole	<0.5%	16595-80-5

**GHS Classification** Not Available

### 4. FIRST AID MEASURES

<b>General Advice</b>	Wash contaminated clothing before reuse. Consult a physician if irritation persists
<b>Oral Exposure</b>	Rinse mouth. Refer for medical attention.
<b>Inhalation Exposure</b>	Remove subject to fresh air. Seek medical attention if necessary.
<b>Skin Exposure</b>	Flush skin with copious amounts of water.
<b>Eye Exposure</b>	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.

### 5. FIRE FIGHTING MEASURES

<b>Extinguishing media</b>	Use extinguishing media appropriate for surrounding fire.
<b>Unusual Fire and Explosive Hazards</b>	Not Available
<b>Flash Point</b>	Not Available
<b>Autoignition Temperature</b>	Not Available
<b>Flammability Statement</b>	Not Available
<b>Specific hazards arising from the chemical</b>	Not Available
<b>Protective equipment and precautions for firefighters</b>	In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Avoid contact with skin, eyes and clothing.
<b>Environmental Precautions</b>	No special environmental precautions required. Should not be released into the environment.
<b>Method of Containment</b>	Contain spill and then clean-up with copious amounts of water.
<b>Methods of Clean-up</b>	Clean up of spills requires no special equipment or procedures. Clean with copious amounts of water.
<b>Other Information</b>	Not Available

### 7. HANDLING AND STORAGE

**Handling:** Wear appropriate PPE. See section 8



**Storage:** Store tightly capped at 2 - 8°C.

## 8. EXPOSURE CONTROL

<b>Respiratory Protection</b>	Ventilation, local exhaust, or breathing protection.
<b>Eye Protection</b>	Safety goggles.
<b>Skin Protection</b>	Protective gloves. Protective clothing.
<b>Ingestion</b>	Do not eat, drink, or smoke during work.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear to very pale yellow solution
<b>Physical State</b>	Liquid
<b>Odor</b>	Not Available
<b>Odor Threshold</b>	Not Available
<b>pH</b>	Not Available
<b>Boiling Point</b>	Not Available
<b>Evaporation Rate</b>	Not Available
<b>Vapor Density</b>	Not Available
<b>Vapor Pressure</b>	Not Available
<b>Relative Density</b>	Not Available
<b>Auto-Ignition Temperature</b>	Not Available
<b>Water Solubility</b>	Not Available
<b>Flammability</b>	Not Available
<b>Flash Point</b>	Not Available
<b>Viscosity</b>	Not Available
<b>Oxidizing Properties</b>	Not Available
<b>Explosive Properties</b>	Not Available
<b>Additional Parameters</b>	See datasheet for other product information.

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable under normal conditions
<b>Conditions to avoid</b>	Not Available
<b>Incompatibility Materials to Avoid</b>	Not Available
<b>Hazardous Decomposition Products</b>	Carbon Monoxide, Carbon Dioxide, Nitrogen Oxides, Sulphur Oxides, Hydrogen Chloride gas.
<b>Hazardous Polymerization</b>	Will not occur
<b>Possibility of hazardous reactions</b>	Not Available

## 11. TOXICOLOGY MEASURES

### Acute Toxicity

The toxicological risks are minor due to the low concentration of hazardous ingredients. The following toxicological information is for the hazardous ingredient in pure form.

<b>LD50 Oral</b>	No Data Available
<b>LD50 Dermal</b>	No Data Available
<b>LC50 Inhalation</b>	No Data Available

SDS #: SDS-10278-01

**Chronic Toxicity**

<b>Carcinogenicity</b>	There are no known carcinogenic chemicals in this product.
<b>Irritation</b>	No Data Available
<b>Corrosivity</b>	No Data Available
<b>Sensitization</b>	No Data Available
<b>Neurological Effects</b>	No Data Available
<b>Mutagenic Effects</b>	No Data Available
<b>Reproductive Effects</b>	No Data Available
<b>Developmental Effects</b>	No Data Available
<b>Target Organ Effects</b>	No Data Available
<b>Other adverse effects</b>	Not Available

**12. ECOLOGICAL MEASURES**

<b>Ecotoxicity</b>	Not Available
<b>Persistence/Degradability</b>	Not Available
<b>Mobility in Environmental Media</b>	Not Available
<b>Bioaccumulation/Accumulation</b>	Not Available

**13. DISPOSAL MEASURES**

<b>Waste Disposal Method:</b>	Observe all Federal, State and Local laws concerning health and pollution.
<b>Contaminated Packaging:</b>	Avoid contact with skin and clothing. Dispose of in compliance with the respective national and local regulations.
<b>US EPA Waste Number:</b>	Not Available

**14. TRANSPORTATION MEASURES**

<b>DOT:</b>	Not Available
<b>IATA:</b>	Not Available
<b>ADR (road)/ RID (rail):</b>	Not Available
<b>IMDG (sea):</b>	Not Available
<b>General Transport Regulations</b>	Not Available

**15. REGULATORY MEASURES**

**This product is a mixture that may contain one or more hazardous chemicals. The hazardous ingredients listed are only those as required by 29 CFR 1910.1200 g 2.C1.**

**SARA 313**

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

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (See 40 CFR 61)**

**SDS #: SDS-10278-01**

This product contains no chemical or chemicals which are subject to the reporting requirements of the Clean Air Act, Section 112 HAPS

**State Regulations****California Proposition 65:**

This product contains the following Proposition 65 chemicals:

**State Right to Know Act**

<b>Chemical Name</b>	<b>Levamisole</b>
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<b>Massachusetts</b>	Not Listed
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<b>New Jersey</b>	Not Listed
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<b>Pennsylvania</b>	Not Listed
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<b>New York</b>	Not Listed
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<b>Rhode Island</b>	Not Listed
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**International Inventories**

<b>Chemical Name</b>	<b>Levamisole</b>
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<b>TSCA</b>	Listed
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<b>DSL</b>	Listed
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<b>NDSL</b>	Not Listed
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<b>EINECS</b>	Listed
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<b>CHINA</b>	Listed
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<b>KECL</b>	Listed
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<b>JAPAN:</b>	Listed
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<b>AICS</b>	Listed
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**EU Regulations**

<b>Annex I Index#</b>	Not Available
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<b>Classification</b>	Not Available
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<b>Risk Phrases</b>	Not Available
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<b>Safety Phrases</b>	Not Available
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<b>Symbols and Indications of Danger</b>	Not Available
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<b>Specific Concentration Limits</b>	Not Available
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<b>Export and Import</b>	This substance is not listed in the Annex I of Regulation (EC) No 649/2012.
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<b>European Priority List</b>	This substance is not listed in a priority list (as foreseen under Council Regulation (EEC) No 793/93 on the evaluation and control of the risks of existing substances.).
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**16. OTHER INFORMATION**

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. KPL shall not be held liable for any damage resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes. This material is sold for research purposes and is intended as laboratory reagents only. It is not intended for food, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals.

Revision Date: 7/26/2014



# Safety Data Sheet

Revision Date: 6/16/2015

SDS # SDS-10265-02

Contrast Red Solution

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Description:**

Contrast Red Solution

**Product Code**

71-00-05

**Hazardous Reagent**

Contrast Red Solution

**Hazardous Reagent Product code**

Catalog No. listed above

**Recommended Use** Reagent

**Contact Manufacturer** KPL, Inc.  
910 Clopper Road  
Gaithersburg, Maryland 20878  
USA

**Phone #:** 1-301-948-7755

**Fax #:** 1-301-948-0169

**Web:** www.kpl.com

**Email:** kplmsds@seracare.com

**Emergency Telephone Numbers:**

AUSTRALIA – POISONS INFORMATION CENTER	Telephone: 13 11 26	Hours: 24 hours
CANADIAN TRANSPORT EMERGENCY CENTER	Telephone: (1 ) 613 996 6666	Hours: 24 hours/day, 7 days/week
UK – THE NATIONAL FOCUS	Telephone: (44) 029 2041 6388	Hours: 09:00-17:00 GMT
USA- NATIONAL RESPONSE CENTER	Telephone: (1 ) 800 424 8802	Hours: 24 hours/day, 7 days/week

**CHEMTREC:**

CHEMTREC Customer Number:- CCN12505\*  
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident  
Call CHEMTREC Day or Night  
Within USA and Canada: 1-800-424-9300 CCN12505 or  
+1 703-527-3887 (collect calls accepted)

## 2. HAZARD IDENTIFICATION

**Hazard Type**

Health

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

**GHS Classification**

Serious Eye Damage (Category 1), H318

**Hazard Statements:**

H318: Causes serious eye damage.

**Precautionary Statements:**

P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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Contrast Red Solution

Symbols and Indications of Danger:

GHS05 Danger



**Principle Route of Exposure** Ingestion, Inhalation and Skin contact.

**Acute Effects: Eye:** May cause redness and irritation

**Acute Effects: Skin:** Dry skin.

**Acute Effects: Inhalation:** Data for 100% Glycerol: Evaporation at 20°C is negligible; a nuisance-causing concentration of airborne particles can, however, be reached quickly on spraying.

**Acute Effects: Ingestion:** Diarrhoea.

**Chronic Effects:** Not Available

**Additional Information** Not Available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CHEMICAL</u>	<u>% Weight</u>	<u>CAS #:</u>
Contrast Red Solution	Glycerol	30%	56-81-5
	Aluminium Sulfate Hydrate	53%	17927-65-0

**GHS Classification** Serious Eye Damage (Category 1), H318

### 4. FIRST AID MEASURES

<b>General Advice</b>	Wash contaminated clothing before reuse. Consult a physician if irritation persists.
<b>Oral Exposure</b>	Rinse mouth. Refer for medical attention.
<b>Inhalation Exposure</b>	Remove subject to fresh air. Seek medical attention if necessary.
<b>Skin Exposure</b>	Rinse with copious amounts of water
<b>Eye Exposure</b>	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.

### 5. FIRE FIGHTING MEASURES

<b>Extinguishing media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray. Alcohol-resistant foam. Dry powder. Carbon dioxide.
<b>Unusual Fire and Explosive Hazards</b>	In case of fire: keep drums, etc., cool by spraying with water. Data for 100% Aluminium Sulfate: Ambient fire may liberate hazardous vapours or decomposition products. Sulphuric oxides Metal oxide fume Wear self-contained breathing apparatus.
<b>Flash Point</b>	Data for 100% Glycerol: 176°C c.c.
<b>Autoignition Temperature</b>	Data for 100% Glycerol: 393°C

SDS # SDS-10265-02

Contrast Red Solution

**Flammability Statement** Combustible. Gives off irritating or toxic fumes (or gases) in a fire.

**Specific hazards arising from the chemical** Upon evaporation of water, glycerol may emit toxic fumes under fire conditions. In the event of fire and/or explosion do not breathe fumes.

**Protective equipment and precautions for firefighters** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions** Avoid contact with skin and clothing.

**Environmental Precautions** Not Available

**Method of Containment** Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place.

**Methods of Clean-up** Clean-up with copious amounts of water.

**Other Information** Not Available

## 7. HANDLING AND STORAGE

**Handling:** Wear appropriate PPE.

**Storage:** Store at 4°C. Separated from strong oxidants.

## 8. EXPOSURE CONTROL

**Respiratory Protection** Ventilation.

**Eye Protection** Safety goggles.

**Skin Protection** Protective gloves and clothing required

**Ingestion** Do not eat, drink, or smoke during work.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** Reddish Colored Solution

**Physical State** Liquid

**Odor** Not Applicable

**Odor Threshold** Not Applicable

**pH** Not Applicable

**Boiling Point** Data for 100% Glycerol: 290°C

**Evaporation Rate** Not Available

**Vapor Density** Data for 100% Glycerol: 3.2

**Vapor Pressure** Data for 100% Glycerol: 0.01

**Relative Density** Data for 100% Glycerol: 1.26

**Auto-Ignition Temperature** Not Available

**Water Solubility** Dilutable

**Flammability** Data for 100% Glycerol: 393°C

**Flash Point** Data for 100% Glycerol: 176°C c.c.

**Viscosity** Viscous

**Oxidizing Properties** Not Available

**Explosive Properties** Data for 100% Glycerol: 2.6 - 11.3

**Additional Parameters** Antibody in 50% Glycerol

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable under normal condition
<b>Conditions to avoid</b>	Data for 100% Glycerol: NO open flames. Data for 100% Aluminium Sulfate Hydrate: The substance can react dangerously with strong oxidizing agents.
<b>Incompatibility Materials to Avoid</b>	Strong oxidizing agents and strong bases
<b>Hazardous Decomposition Products</b>	Carbon Monoxide, Carbon Dioxide, Sulphur Oxides, Aluminium Oxide
<b>Hazardous Polymerization</b>	Not Available
<b>Possibility of hazardous reactions</b>	Data for 100% Glycerol: Reacts with strong oxidants causing fire and explosion hazard.

## 11. TOXICOLOGY MEASURES

### Acute Toxicity

The toxicological risks are minor due to the low concentration of hazardous ingredients. The following toxicological information is for the hazardous ingredient in pure form.

<b>LD50 Oral</b>	Data for 100% Aluminium Sulfate: LD50 oral rat Value: > 9000 mg/kg Reference: Pharmacology and Toxicology Vol. 60, Pg. 280, 1987. Data for 100% Glycerol: LD50 oral rat: 12600 mg/kg Reference: Federation Proceedings, Federation of American Societies for Experimental Biology. Vol. 4, Pg. 142, 1945.
<b>LD50 Dermal</b>	Data for 100% Glycerol: LD50 dermal rat/rabbit: > 10000 mg/kg Species: Rabbit Reference: BIOFAX Industrial Bio-Test Laboratories, Inc., Data Sheets. Vol. 9-4/1970,
<b>LC50 Inhalation</b>	Not Available
<b><u>Chronic Toxicity</u></b>	
<b>Carcinogenicity</b>	Not Available
<b>Irritation</b>	Yes - May Occur
<b>Corrosivity</b>	Data for 100% Aluminium Sulfate: Serious eye damage, Category 1; H318
<b>Sensitization</b>	Not Available
<b>Neurological Effects</b>	Not Available
<b>Mutagenic Effects</b>	Not Available
<b>Reproductive Effects</b>	Not Available
<b>Developmental Effects</b>	Not Available
<b>Target Organ Effects</b>	Oral, Skin, Respiratory Tract, Gastrointestinal Tract.
<b>Other adverse effects</b>	None

## 12. ECOLOGICAL MEASURES

<b>Ecotoxicity</b>	Data for 100% Aluminium Sulfate: LC50 Fish (96 hours) Minimum: 0,958 mg/l Maximum: 36,1 mg/l Median: 2,99 mg/l Study number: 6 Reference for median: Roy, R.L., and P.G.C. Campbell 1997. Decreased Toxicity of A1 to Juvenile Atlantic Salmon (Salmo salar) in Acidic Soft Water Containing Natural Organic Matter: A Test of the Free-Ion Model. Environ.Toxicol.Chem. 16(9):1962-1969; Mayer, F.L.Jr., and M.R. Ellersieck 1986. Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals. Resour.Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC :505 p. (USGS Data File)
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LC50 Crustaceans (48 hours) Minimum: 23,6 mg/l Maximum: 38,2 mg/l Median: 38,2 mg/l

Study number: 6 Reference for median: Kimball, G. 1978. The Effects of Lesser Known Metals and One Organic to Fathead Minnows (*Pimephales promelas*) and *Daphnia magna*. Manuscr., Dep.of Entomol., Fish.and Wildl., Univ.of Minnesota, Minneapolis, MN :88 p.

<b>Persistence/Degradability</b>	Data for 100% Glycerol: Readily biodegradable in aquatic environment
<b>Mobility in Environmental Media</b>	Not Available
<b>Bioaccumulation/Accumulation</b>	Not expected

### 13. DISPOSAL MEASURES

<b>Waste Disposal Method:</b>	Observe all Federal, State and Local laws concerning health and pollution.
<b>Contaminated Packaging:</b>	Avoid contact with skin and clothing. Place contaminated packaging in a break proof outer vessel and dispose on in compliance with national and local regulations.
<b>US EPA Waste Number:</b>	Not Available

### 14. TRANSPORTATION MEASURES

<b>DOT:</b>	Not Available
<b>IATA:</b>	Not Available
<b>ADR (road)/ RID (rail):</b>	Not Available
<b>IMDG (sea):</b>	Not Available
<b>General Transport Regulations</b>	Not Available

### 15. REGULATORY MEASURES

**This product is a mixture that may contain one or more hazardous chemicals. The hazardous ingredients listed are only those as required by 29 CFR 1910.1200 (OSHA HCS).**

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains no chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372.

#### **Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (See 40 CFR 61)**

This product contains no chemical or chemicals which are subject to the reporting requirements of the Clean Air Act.

#### **State Regulations**

#### **California Proposition 65:**

This product contains the following Proposition 65 chemicals: None Listed

#### **State Right to Know Act**

Chemical Name	Glycerol	Aluminium Sulfate Hydrate
Massachusetts	Listed	
New Jersey	Listed	Not Listed
Pennsylvania	Listed	Not Listed
New York	Not Listed	Not Listed
Rhode Island	Not Listed	Not Listed

#### **International Inventories**

SDS # SDS-10265-02

Contrast Red Solution

Chemical Name	Glycerol	Aluminium Sulfate Hydrate
TSCA	Listed	Not Listed
DSL	Listed	Not Listed
NDSL	Not Listed	Not Listed
EINECS	Listed	Listed
CHINA	Listed	Listed
KECL	Listed	Listed
JAPAN:	Listed	Listed
AICS	Listed	Not Listed

**EU Regulations**

<b>Annex I Index#</b>	Not Applicable
<b>Classification</b>	Serious Eye Damage (Category 1), H318
<b>Hazard Statements</b>	H318: Causes serious eye damage.
<b>Precautionary Statements</b>	P280: Wear protective gloves/protective clothing/eye protection/face protection. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>Symbols and Indications of Danger</b>	GHS05 Danger
<b>Specific Concentration Limits</b>	Not Applicable

<b>16. OTHER INFORMATION</b>
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The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. KPL shall not be held liable for any damage resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes. This material is sold for research purposes and is intended as laboratory reagents only. It is not intended for food, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals.