Safety Data Sheet

Revision Date: 7/31/2014

SDS #: SDS-10255-01

HistoMark RED

1. PRODUCT AND COMPANY IDENTIFICATION

Product Description:	**Product Code**
HistoMark RED	55-69-00

Kit Components:

Histo, Activator Solution	71-00-01
PhThaloRED Solution	71-00-02
Buffered Substrate Solution	71-00-04
Contrast Blue Solution	71-00-06

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
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)

Safety Data Sheet

Revision Date: 6/30/2014

SDS # SDS-10302-01

PhThaloRED Solution

1. PRODUCT AND COMPANY IDENTIFICATION

Product Description:	**Product Code**
PhThaloRED Solution	71-00-02

Hazardous Reagent
PhThaloRED 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 10 - 25% Hydrochloric Acid: Skin Irrit. 2;H315: 10 % ≤ C < 25 % | Eye Irrit. 2; H319: 10 % ≤ C < 25 % | STOT SE 3; H335: C ≥ 10 % 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 Acute Tox. 4 (Acute toxicity) | Skin Corr. 1B (Skin corrosion/irritation) | STOT SE 3 (Specific target organ toxicity — single exposure)

Hazard Statement H302 : Harmful if swallowed. | H314: Causes severe skin burns and eye damage | H335: May cause respiratory irritation

Precautionary Statement P260: Do not breathe dust/ fume/ gas/ mist/ vapours/ spray | P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray | P264: Wash skin thoroughly after handling. | P270: Do not eat, drink or smoke when using this product. | P271: Use only outdoors or in a well-ventilated area.

Symbols of Danger GHS05
GHS07
Danger

Data for 100% Hazardous Chemical

ROUTES OF EXPOSURE:	The substance can be absorbed into the body by inhalation.
INHALATION RISK:	A harmful concentration of this gas in the air will be reached very quickly on loss of containment.
SHORT-TERM EXPOSURE	Rapid evaporation of the liquid may cause frostbite. The substance is corrosive to the eyes, the skin and the respiratory tract. Inhalation of high concentrations of the gas may cause pneumonitis and lung oedema, resulting in reactive airways dysfunction syndrome (RADS). The effects may be delayed. Medical observation is indicated.
LONG-TERM EXPOSURE:	The substance may have effects on the lungs , resulting in chronic bronchitis. The substance may have effects on the teeth, resulting in erosion.

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

EYES: Corrosive. Pain. Blurred vision. Severe deep burns.

SKIN: ON CONTACT WITH LIQUID: FROSTBITE. Corrosive. Serious skin burns. Pain.

INHALATION: Corrosive. Burning sensation. Cough. Laboured breathing. Shortness of breath. Sore throat. Symptoms may be delayed (see Notes).

INGESTION: Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract.

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

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

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

Component	CHEMICAL	% Weight	CAS #:
PhThaloRED Solution	2,2' -oxybisethanol diethylene glycol	10%	111-46-6
	Hydrochloric Acid	15.1%	7647-01-0

Classification Acute Tox. 4 (Acute toxicity) | Skin Corr. 1B (Skin corrosion/irritation) | STOT SE 3 (Specific target organ toxicity — single exposure)

4. FIRST AID MEASURES

Data for 100% Hazardous Chemical

Ingestion First Aid:	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.
Inhalation First Aid:	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
Skin First Aid:	First rinse with plenty of water, then remove contaminated clothes and rinse again. Refer for medical attention.
Eye First Aid:	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.

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

5. FIRE FIGHTING MEASURES

Data For 100% Hazardous Chemical

Fire Acute Hazard:	Fire Prevention:	Fire Fighting:
Not combustible.	Not Available	In case of fire in the surroundings: use appropriate extinguishing media.

Explosion Acute Hazard:		
Not Available	Not Available	In case of fire: keep cylinder cool by spraying with water.

CHEMICAL DANGERS: The solution in water is a strong acid, it reacts violently with bases and is corrosive. Reacts violently with oxidants forming toxic gas. Attacks many metals in the presence of water forming flammable/explosive gas.

PHYSICAL DANGERS: The gas is heavier than air.

Fire Acute Hazard:	Fire Prevention:	Fire Fighting:
Combustible.	NO open flames.	Powder, alcohol-resistant foam, water spray, carbon dioxide .

Explosion Acute Hazard:		
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

Personal Precautions	Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Should not be released into the environment.
Method of Containment	Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.
Methods of Clean-up	Clean-up with copious amounts of water.
Other Information	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

SPILLAGE DISPOSAL	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.
SPILLAGE DISPOSAL	Evacuate danger area! Consult an expert! Ventilation. Remove gas with fine water spray. Personal protection: complete protective clothing including self-contained breathing apparatus.

7. HANDLING AND STORAGE

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

Storage: Store at room temperature. Data for 100% Diethylene Glycol: Dry. Well closed. Separated from strong oxidants.

Data for 100% Hazardous Chemical

STORAGE	Dry. Well closed. Separated from strong oxidants.
STORAGE	Separated from combustible and reducing substances, strong oxidants, strong bases, metals . Keep in a well-ventilated room. Cool. Dry.

8. EXPOSURE CONTROL

Data for 100% Hazardous Chemical

INHALATION	Ventilation, local exhaust, or breathing protection.
EYES	Safety goggles or eye protection in combination with breathing protection.
SKIN	Cold-insulating gloves. Protective clothing.
•INGESTION	Do not eat, drink, or smoke during work.
•INHALATION	Ventilation.
•EYES	Safety spectacles.
•SKIN	Protective gloves.
•INGESTION	Do not eat, drink, or smoke during work.

Engineering Controls Not Available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Greenish/Yellow Solution.

Physical State Liquid **pH:** < 2.0

Data for 100% Hazardous Chemical

Boiling point: -85°C	Melting point: -114°C	Density: 1.00045 g/l (gas)	Solubility in water, g/100 ml at 30°C: 67	Relative vapour density (air = 1): 1.3	Octanol/water partition coefficient as log Pow: 0.25
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

Chemical Stability Stable

Incompatibility Materials to Avoid Metals, strong oxidizing agents

Hazardous Decomposition Products Upon evaporation of water, may emit toxic fumes of Hydrogen chloride

Hazardous Polymerization Will not occur

Data for 100% Hazardous Chemical

CHEMICAL DANGERS:	The solution in water is a strong acid, it reacts violently with bases and is corrosive. Reacts violently with oxidants forming toxic gas. Attacks many metals in the presence of water forming flammable/explosive gas.
PHYSICAL DANGERS:	The gas is heavier than air.
CHEMICAL DANGERS:	Reacts violently with strong oxidants causing fire and explosion hazard. Attacks some forms of plastic.
PHYSICAL DANGERS:	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.

LD50 Oral	Data for >10 - 25% aqueous Hydrochloric Acid: SPECIES: Rat ENDPOINT: LD50 VALUE: 700 mg/kg bw REFERENCE SOURCE: DOW Deutschland Inc., Werk Stade Stade 5 (110) Monsanto (1976) unpublished report YO-76-0404 of Monsanto [iuclid 2000] Data for Diethylene Glycol: SPECIES: Cat ENDPOINT: LD50 VALUE: 3300 mg/kg bw REFERENCE SOURCE: Occidental Chemical Corporation Niagara Falls, NY 14302-0728 (114) REFERENCE-(1939) Journal of Industrial Hygiene and Toxicology 21:173, as cited in RTECS. [IUCLID 2000]
LD50 Dermal	Data for > 10 - 25 % aqueous Hydrochloric Acid: SPECIES: RESULT: Corrosive REFERENCE SOURCE: IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer,1972-PRESENT. (Multivolume work).,p. V54 201(1992) [HSDB] UN CLASS: 8 PG II
LC50 Inhalation	Data for > 10 - 25 % aqueous Hydrochloric Acid: LC50 Crustaceans (48 hours) Minimum: 240 mg/l Maximum: 260 mg/l Median: 250 mg/l Study number: 2 Reference for median: Portmann, J.E., and K.W. Wilson 1971. The Toxicity of 140 Substances to the Brown Shrimp and Other Marine Animals. Shellfish Information Leaflet No.22 (2nd Ed.), Ministry of Agric.Fish.Food, Fish.Lab.Burnham-on-Crouch, Essex, and Fish Exp.Station Conway, North Wales :12 p.

Chronic Toxicity

Carcinogenicity	Not Available
Irritation	Not Available
Corrosivity	Data for >2-10% aqueous Hydrochloric Acid: Corrosive to dermal and ocular tissue
Sensitization	Not Available
Neurological Effects	Not Available
Mutagenic Effects	Not Available
Reproductive Effects	Not Available
Developmental Effects	Not Available
Target Organ Effects	Eyes, Skin and Respiratory tract

Other adverse effects Not Available

12. ECOLOGICAL MEASURES

Ecotoxicity Data for 36% Hydrochloric Acid: LC50 Crustaceans (48 hours) Minimum: 240 mg/l Maximum: 260 mg/l Median: 250 mg/l

Persistence/Degradability Data for 100% 2,2' -oxybisethanol diethylene glycol : Readily Biodegradable

Mobility in Environmental Media 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**

Bioaccumulation/ Accumulation 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

Waste Disposal Method: Carefully stir residue into a large excess of water. Next, neutralise with soda lye; check the pH level. Place in a collection container for salt solutions. This container should be adjusted for a pH value of 6-8. 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.

Contaminated Packaging: 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: Not Available

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 (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

Annex I Index#	Data for 100% 2,2'-oxydiethanol: 603-140-00-6 | Data for 100% Hydrochloric Acid: 017-002-00-2
Classification	Acute Tox. 4 (Acute toxicity) | Skin Corr. 1B (Skin corrosion/irritation) | STOT SE 3 (Specific target organ toxicity — single exposure)
Risk Phrases	H302 : Harmful if swallowed. | H314: Causes severe skin burns and eye damage | H335: May cause respiratory irritation
Safety Phrases	P260: Do not breathe dust/ fume/ gas/ mist/ vapours/ spray | P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray | P264: Wash skin thoroughly after handling. | P270: Do not eat, drink or smoke when using this product. | P271: Use only outdoors or in a well-ventilated area.
Symbols and Indications of Danger	GHS05 GHS07 Danger
Specific Concentration Limits	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 %
Export and Import	This substance is not listed in the Annex I of Regulation (EC) No 649/2012.
European Priority List	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

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Fax #: 1-301-948-0169
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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

Component	CHEMICAL	% Weight	CAS #:
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

Fire Acute Hazard:	Fire Prevention:	Fire Fighting:
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.

Explosion Acute Hazard:		
Not Available	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

Personal Precautions

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.

Environmental Precautions

Severe hazard to waters. Inform the responsible authorities when only small quantities get into water, drainage, sewer, or the ground.

Method of Containment

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.

Methods of Clean-up

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.

Other Information

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

Handling:

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.

Storage:

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

•INHALATION	Local exhaust or breathing protection.
•EYES	Safety spectacles.
•SKIN	Protective gloves.
•INGESTION	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

Appearance The solution should appear clear and may have a slight yellow tint.

Physical State Liquid **pH:** Not Available

Data for 100% Hazardous Chemical

Decomposes at 320°C
Decomposes at 280°C
Density: 2.2 g/cm³
Solubility in water, g/100ml at 20°C: 82
Octanol/water partition coefficient as log Pow: -3.7

10. STABILITY AND REACTIVITY

Chemical Stability Stable under normal conditions

Incompatibility Materials to Avoid Separated from combustible substances, reducing agents and acids.

Hazardous Decomposition Products Data for 100% Sodium Nitrite: At temperatures above 320 deg.C: nitrogen monoxide; nitrogen dioxide; disodium oxide

Hazardous Polymerization Not Available.

Data for 100% Hazardous Chemical

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

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.

LD50 Oral Data for 100% Sodium Nitrite: LD50 oral rat

Value: 180 mg/kg
Reference: American Industrial Hygiene Association Journal. Vol. 30, Pg. 470, 1969.

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

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

12. ECOLOGICAL MEASURES

Ecotoxicity

Data for 100% Sodium Nitrite: Very toxic to aquatic organisms
LC50 Fish (96 hours)

Minimum: 0,048 mg/l
Maximum: 1260 mg/l
Median: 0,675 mg/l

Study number: 106

Reference for median:

Wedemeyer, G.A., and W.T. Yasutake 1978. Prevention and Treatment of Nitrite Toxicity in Juvenile Steelhead Trout (Salmo gairdneri). 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 (Salmo gairdneri): Effects of pH, Nitrite Species, and Anion Species. Can.J.Fish.Aquat.Sci. 38:387-393

LC50 Crustaceans (48 hours)

Minimum: 1,1 mg/l
Maximum: 2660 mg/l
Median: 35,1 mg/l

Study number: 10

Reference for median:

Chen, J.C., and T.S. Chin 1988. Acute Toxicity of Nitrite to Tiger Prawn, Penaeus monodon, 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, Cherax quadricarinatus. J.Shellfish Res. 14(2):341-346

Persistence/Degradability	Readily Degradable
Mobility in Environmental Media	Not Available
Bioaccumulation/ Accumulation	Data for 100% Sodium Nitrite: Log Pow = -3,7 | BCF = 11

13. DISPOSAL MEASURES

Waste Disposal Method:	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.
Contaminated Packaging:	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 g 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

Annex I Index#	Annex I Index# : 007-010-00-4 Substance Name in Annex 1 : sodium nitrite
Classification	Eye irritation, Category 2; H319 Acute Tox. 4 H302 Aquatic Acute 1: H400
Risk Phrases	H301: Toxic if swallowed. H319: Causes serious eye irritation. H400: Very toxic to aquatic life.
Safety Phrases	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:	**Product Code**
Buffered Substrate Solution	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

Hazard Type 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.

Principle Route of Exposure Not Available

Acute Effects: Eye: May cause redness and irritation

Acute Effects: Skin: Dry skin and Irritation may occur

Acute Effects: Inhalation: May be harmful if inhaled in very large quantities.

Acute Effects: Ingestion: May be harmful if swallowed.

Chronic Effects: Not Available

Additional Information The product contains no substances which at their given concentration, are considered to be

hazardous to health

3. COMPOSITION/INFORMATION ON INGREDIENTS

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

GHS Classification Not Available

4. FIRST AID MEASURES

General Advice Wash contaminated clothing before reuse. Consult a physician if irritation persists

Oral Exposure Rinse mouth. Refer for medical attention.

Inhalation Exposure Remove subject to fresh air. Seek medical attention if necessary.

Skin Exposure Flush skin with copious amounts of water.

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

5. FIRE FIGHTING MEASURES

Extinguishing media Use extinguishing media appropriate for surrounding fire.

Unusual Fire and Explosive Hazards Not Available

Flash Point Not Available

Autoignition Temperature Not Available

Flammability Statement Not Available

Specific hazards arising from the chemical Not Available

Protective equipment and precautions for firefighters 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

Personal Precautions Avoid contact with skin, eyes and clothing.

Environmental Precautions No special environmental precautions required. Should not be released into the environment.

Method of Containment Contain spill and then clean-up with copious amounts of water.

Methods of Clean-up Clean up of spills requires no special equipment or procedures. Clean with copious amounts of water.

Other Information Not Available

7. HANDLING AND STORAGE

Handling: Wear appropriate PPE. See section 8

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

8. EXPOSURE CONTROL

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

9. PHYSICAL AND CHEMICAL PROPERTIES

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

10. STABILITY AND REACTIVITY

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

LD50 Oral	No Data Available
LD50 Dermal	No Data Available
LC50 Inhalation	No Data Available

Chronic Toxicity

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

12. ECOLOGICAL MEASURES

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

13. DISPOSAL MEASURES

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

14. TRANSPORTATION MEASURES

DOT:	Not Available
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 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)

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

Chemical Name	Levamisole
Massachusetts	Not Listed
New Jersey	Not Listed
Pennsylvania	Not Listed
New York	Not Listed
Rhode Island	Not Listed

International Inventories

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

EU Regulations

Annex I Index#	Not Available
Classification	Not Available
Risk Phrases	Not Available
Safety Phrases	Not Available
Symbols and Indications of Danger	Not Available
Specific Concentration Limits	Not Available
Export and Import	This substance is not listed in the Annex I of Regulation (EC) No 649/2012.
European Priority List	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: **7/26/2014**

Safety Data Sheet

Revision Date: **6/16/2015**

SDS # **SDS-10266-02** **Contrast Blue Solution**

1. PRODUCT AND COMPANY IDENTIFICATION

Product Description:	**Product Code**
Contrast Blue Solution	71-00-06

Hazardous Reagent
Contrast BLUE 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*

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.

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

Component	CHEMICAL	% Weight	CAS #:
Contrast Blue Solution	GLYCEROL	10%	56-81-5
	Aluminium Sulfate	5%	17927-65-0

GHS Classification Serious Eye Damage (Category 1), H318

4. FIRST AID MEASURES

General Advice Wash contaminated clothing before reuse. Consult a physician if irritation persists.

Oral Exposure Rinse mouth. Refer for medical attention.

Inhalation Exposure Remove subject to fresh air. Seek medical attention if necessary.

Skin Exposure Rinse with copious amounts of water

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

5. FIRE FIGHTING MEASURES

Extinguishing media Water spray. Alcohol-resistant foam. Dry powder. Carbon dioxide

Unusual Fire and Explosive Hazards Data for 100% Glycerol: 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.

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

Autoignition Temperature Data for 100% Glycerol: 393°C

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 omit 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 Applicable
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 Applicable

7. HANDLING AND STORAGE

Handling:	Wear appropriate PPE.
Storage:	Store at 2-8°C. refrigerated.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-purple 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 Applicable
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	Data for 100% Glycerol: 393°C
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 Applicable
Explosive Properties	Data for 100% Glycerol: 2.6 - 11.3
Additional Parameters	Not Applicable

10. STABILITY AND REACTIVITY

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

LD50 Oral	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.
LD50 Dermal	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,
LC50 Inhalation	Not Available

Chronic Toxicity

Carcinogenicity	Not Available
Irritation	Yes - May Occur
Corrosivity	Data for 100% Aluminium Sulfate: Serious eye damage, Category 1; H318
Sensitization	Not Available
Neurological Effects	Not Available
Mutagenic Effects	Not Available
Reproductive Effects	Not Available
Developmental Effects	Not Available
Target Organ Effects	Oral, Skin, Respiratory Tract, Gastrointestinal Tract.
Other adverse effects	Not Available

12. ECOLOGICAL MEASURES

Ecotoxicity	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)

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.

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

13. DISPOSAL MEASURES

Waste Disposal Method:	Observe all Federal, State and Local laws concerning health and pollution.
Contaminated Packaging:	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:	Not Available
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 (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**
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

Chemical Name	**GLYCEROL**	**Aluminium Sulfate**
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

Annex I Index#	Not Applicable
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.
Symbols and Indications of Danger	GHS05 Danger
Specific Concentration Limits	Not Applicable

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.