Safety Data Sheet

Revision Date: 7/31/2014

SDS #: SDS-10250-01

HistoMark ORANGE

1. PRODUCT AND COMPANY IDENTIFICATION

Product Description:	**Product Code**
HistoMark® ORANGE	54-74-00

Kit Components:

Enhance ORANGE Buffer Solution	71-00-07
Peroxidase Solution	71-00-09
HISTO Blocking Solution	71-00-10
Histo Contrast Green Solution	71-00-11
	71-00-13

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: 7/18/2014

SDS #: 10061

Enhance ORANGE Buffer Solution

1. PRODUCT AND COMPANY IDENTIFICATION

Product Description:

Enhance ORANGE Buffer Solution

Product Code

71-00-07

Hazardous Reagent

Enhance ORANGE Buffer Solution

Hazardous Reagent Product code

Catalog No. listed above

Recommended Use Reagent

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

Phone #: 1-800-638-3167
Fax #: 1-301-948-169
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

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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

Contains one of Nickel sulfate Compounds:
Health and Environmental Hazard
CAS No: 7786-81-4 (anhydrous), 10101-97-0 (Hexahydrate), 10101-98-1 (heptahydrate)
INDEX No: 028-009-00-5
EC No: 232-104-9

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

Classification

Nickel sulfate
CAS No: 7786-81-4 (anhydrous), 10101-97-0 (Hexahydrate), 10101-98-1
(heptahydrate)
INDEX No: 028-009-00-5
EC No: 232-104-9
Carc. 2: Suspected of causing cancer by Inhalation
Acute Tox. 4 *: Harmful if swallowed
Resp. Sens. 1: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Skin Sens. 1: May cause an allergic skin reaction
Aquatic Acute 1: Very toxic to aquatic life

Aquatic Chronic 1: Very toxic to aquatic life with long lasting effects

Hazard Statement

H351: May cause cancer by inhalation.
H302: Harmful if swallowed
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317: May cause an allergic skin reaction
H400: Very toxic to aquatic life
H410: Very toxic to aquatic life with long lasting effects

Precautionary Statement

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P264: Wash skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P285: In case of inadequate ventilation
wear respiratory protection.
P272: Contaminated work clothing
should not be allowed out of the workplace.
P280: Wear protective gloves/protective
clothing/eye protection/ face protection.
P273: Avoid release to the environment.

Symbols of Danger

GHS08; GHS07; GHS09; Danger

Data for 100% Hazardous Chemical

ROUTES OF EXPOSURE:	The substance can be absorbed into the body by inhalation, through the skin and by ingestion.
INHALATION RISK:	Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.
SHORT-TERM EXPOSURE	The substance is irritating to the eyes, skin and respiratory tract.
LONG-TERM EXPOSURE:	Repeated or prolonged contact may cause skin sensitization. Repeated or prolonged inhalation may cause asthma. Repeated or prolonged inhalation of of the aerosol may cause effects on the lungs. The substance may have effects on the nasal sinuses. This may result in inflammation and ulceration. This substance is carcinogenic to humans.

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

EYE: Redness.
SKIN: Redness.
INHALATION: Cough. Sore throat.
INGESTION: Abdominal pain. Dizziness. Headache. Nausea. Vomiting.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CHEMICAL	% Weight	CAS #:
Enhance ORANGE Buffer Solution	Nickel Sulfate Hexahydrate	25.0%	10101-97-0
	Sodium Acetate Trihydrate	<8%	6131-90-4

Classification

Nickel sulfate
CAS No: 7786-81-4 (anhydrous), 10101-97-0 (Hexahydrate), 10101-98-1 (heptahydrate)
INDEX No: 028-009-00-5
EC No: 232-104-9
Carc. 2: Suspected of causing cancer by Inhalation
Acute Tox. 4 *: Harmful if swallowed
Resp. Sens. 1: May cause allergy or asthma symptoms or breathing difficulties if inhaled

Skin Sens. 1: May cause an allergic skin reaction
Aquatic Acute 1: Very toxic to aquatic life
Aquatic Chronic 1: Very toxic to aquatic life with long lasting effects

4. FIRST AID MEASURES

Data for 100% Hazardous Chemical

Ingestion First Aid:	Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention .
Inhalation First Aid:	Fresh air, rest. Refer for medical attention.
Skin First Aid:	Remove contaminated clothes. Rinse skin with plenty of water or shower.
Eye First Aid:	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

5. FIRE FIGHTING MEASURES

Data For 100% Hazardous Chemical

Fire Acute Hazard:	**Fire Prevention:**	**Fire Fighting:**
Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.	Not Available	In case of fire in the surroundings, use appropriate extinguishing media.

Explosion Acute Hazard:		
Not Available	Not Available	Not Available

CHEMICAL DANGERS: Decomposes at 848°C. This produces toxic fumes of sulfur trioxide and nickel monoxide. The solution in water is a weak acid.

PHYSICAL DANGERS: Not Available

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Avoid contact with skin and clothing. Personal protection: P2 filter respirator for harmful particles.
Environmental Precautions	Do not let this chemical enter the environment.
Method of Containment	Collect leaking and spilled liquid in sealable containers as far as possible and hold for waste disposal.
Methods of Clean-up	Vacuum spilled material. Carefully collect remainder, then remove to safe place. Avoid raising dust. Ventilate area and wash spill site with copious amount of water after material pick up is complete.
Other Information	Data for 100% Nickel Sulfate Hexahydrate: Wear self contained breathing apparatus, rubber boots and heavy rubber gloves.

Data for 100% Hazardous Chemical

Spillage Disposal	Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Vacuum spilled material with specialist equipment. Carefully collect remainder. Then store and dispo

7. HANDLING AND STORAGE

Handling:	Wear appropriate PPE. Refer to section 8.
Storage:	Store at 4°C, indoor, refrigerated.

Data for 100% Hazardous Chemical

Storage	Not Available

8. EXPOSURE CONTROL

Data for 100% Hazardous Chemical

INHALATION	Use ventilation (not if powder), local exhaust or breathing protection.
EYE	Wear safety spectacles, face shield or eye protection in combination with breathing protection if powder.
SKIN	Protective gloves. Protective clothing.
INGESTION	Do not eat, drink, or smoke during work.

Engineering Controls Not Available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Clear and light green in color.

Physical State Liquid **pH:** Not Available

Data for 100% Hazardous Chemical

Decomposes at 840°CDensity: 3.7 g/cm³Solubility in water, g/100ml at 0°C: 29.3

10. STABILITY AND REACTIVITY

Chemical Stability Stable

Incompatibility Materials to Avoid Strong oxidizing agents

Hazardous Decomposition Products Carbon monoxide, carbon dioxide and sulfur oxides

Hazardous Polymerization Will not occur

Data for 100% Hazardous Chemical

CHEMICAL DANGERS: Decomposes at 848°C. This produces toxic fumes of sulfur trioxide and nickel monoxide. The solution in water is a weak acid.

PHYSICAL DANGERS: Not Available

11. TOXICOLOGY MEASURES

Acute Toxicity Data for 100% Nickel S

The following toxicological information is for the hazardous ingredient in pure form.

LD50 Oral Data for 100% Nickel Sulphate Hexahydrate: Rat- 264 mg/kg

LD50 Dermal Not Available

LC50 Inhalation Not Available

Chronic Toxicity

Carcinogenicity Data for 100% Nickel Sulphate Hexahydrate: May cause cancer by inhalation

Irritation Not Available

Corrosivity Not Available

Sensitization Not Available

Neurological Effects Not Available

Mutagenic Effects Data for 100% Nickel Sulphate Hexahydrate: Possible risk of irreversible effects

Reproductive Effects Data for 100% Nickel Sulphate Hexahydrate: May cause harm to the unborn child

Developmental Effects Not Available

Target Organ Effects	Data for 100% Nickel Sulphate Hexahydrate: Lungs
Other adverse effects	

12. ECOLOGICAL MEASURES

Ecotoxicity	Data for 100% Nickel Sulfate Hexahydrate:Ecotoxic in the aquatic environment
Persistence/Degradability	Data for 100% Nickel Sulfate Hexahydrate: ND
Mobility in Environmental Media	Not Available
Bioaccumulation/ Accumulation	Data for 100% Nickel Sulfate Hexahydrate: ND

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 regulated.
IATA:	Not regulated.
ADR (road)/ RID (rail):	Not regulated.
IMDG (sea):	Not regulated
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 is subject to SARA section 313 reporting requirements :
Nickel Compounds | CAS/313 Category Codes: N495 | CERCLA RQ: & (Indicates that no RQ is assigned to this generic or broad class, although the class is a CERCLA hazardous substance. See 50 Federal Register 13456 (April 4, 1985).) | Section 313: 313

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

Listed as Chemical: NICKEL COMPOUNDS CAS Number: NDB000

State Regulations

California Proposition 65:

This product contains the following Proposition 65 chemicals: Nickel Compounds | Type of Toxicity: cancer | CAS No. --- | Date Listed: May 7, 2004

State Right to Know Act

Chemical Name	Nickel Sulfate Hexahydrate	Sodium Acetate Trihydrate
Massachusetts	Not Listed	Not Listed
New Jersey	Listed	Not Listed
Pennsylvania	Not Listed	Not Listed
New York	Not Listed	Not Listed
Rhode Island	Not Listed	Not Listed

International Inventories

Chemical Name	Nickel Sulfate Hexahydrate	Sodium Acetate Trihydrate
TSCA	Not Listed	Not Listed
DSL	Not Listed	Not Listed
NDSL	Not Listed	Not Listed
EINECS	Not Listed	Not Listed
CHINA	Listed	Listed
KECL	Listed	Listed
JAPAN:	Listed	Listed
AICS	Not Listed	Listed

EU Regulations

Annex I Index#	Data for 100% Nickel Sulfate CAS# 7786-81-4: 028-009-00-5
Classification	Nickel sulfate CAS No: 7786-81-4 (anhydrous), 10101-97-0 (Hexahydrate), 10101-98-1 (heptahydrate) INDEX No: 028-009-00-5 EC No: 232-104-9 Carc. 2: Suspected of causing cancer by Inhalation Acute Tox. 4 *: Harmful if swallowed Resp. Sens. 1: May cause allergy or asthma symptoms or breathing difficulties if inhaled Skin Sens. 1: May cause an allergic skin reaction Aquatic Acute 1: Very toxic to aquatic life Aquatic Chronic 1: Very toxic to aquatic life with long lasting effects
Risk Phrases	H351: May cause cancer by inhalation. H302: Harmful if swallowed H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled H317: May cause an allergic skin reaction H400: Very toxic to aquatic life H410: Very toxic to aquatic life with long lasting effects
Safety Phrases	P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P281: Use personal protective equipment as required. P264: Wash skin thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P285: In case of inadequate ventilation wear respiratory protection. P272: Contaminated work clothing should not be allowed out of the workplace. P280: Wear protective gloves/protective clothing/eye protection/ face protection. P273: Avoid release to the environment.
Symbols and Indications of Danger	GHS08; GHS07; GHS09; Danger
Specific Concentration Limits	2,5 % ≤ C < 20 % - T, N; R49-61-42/43-48/23-68-51/53
Export and Import	This substance is not listed in the Annex I of Regulation (EC) No 689/2008.
European Priority List	Data for 100% Nickel Sulfate: Rapporteur : Denmark Priority List# : 3 ECB# : 312

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: **7/18/2014**

Safety Data Sheet

KPL Peroxidase Solution SDS

SDS-10321 Rev. Number: 2 Rev. Date: Dec 20, 2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product Description:	**Product Code**
KPL Peroxidase Solution	5570-0004 (71-00-09)

Hazardous Reagent

Product Description listed above

Hazardous Reagent Product code

Catalog No. listed above

Recommended Use: Reference Reagent

Contact Manufacturer: SeraCare Life Sciences
910 Clopper Road
Gaithersburg, MD 20878

Phone #: (508) 244-6400
US Toll Free: (800) 676-1881

Fax #: (508) 634-3394

Web: www.seracare.com

Email: customerservice@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.
	GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Principle Route of Exposure:	Inhalation and Ingestion
Acute Effects: Eye	Unlikely to cause eye irritation or injury
Acute Effects: Skin:	Unlikely to cause skin irritation or injury
Acute Effects: Inhalation:	No adverse health effects expected from inhalation. A nuisance-causing concentration of airborne particles can be reached quickly when dispersed.
Ingestion:	Swallowing small amounts of this material during normal handling is not likely to cause harmful effects.
	Swallowing large amounts may be harmful. May cause gastrointestinal upset.
Chronic Effects	None available
Additional Information	Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	**CHEMICAL**	**% Weight**	**CAS #:**
Peroxidase Solution	Hydrogen Peroxide, 30%	< 4%	7722-84-1
GHS Classification	Not Applicable		

4. FIRST AID MEASURES

General Advice:	Wash contaminated clothing before reuse. Seek medical attention if necessary.
Ingestion First Aid:	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Inhalation Exposure:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician
Skin Exposure:	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention
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:	In case of fire in the surroundings: carbon dioxide, foam, powder, water spray..
Unusual Fire and Explosive Hazards:	Not Available
Flash Point:	Not available
Auto ignition Temperature:	Not Available
Flammability Statement:	Not Available
Specific hazards arising from the chemical:	Not available
Protective equipment and	Wear self-contained breathing apparatus and protective clothing to prevent contact with

precautions for firefighters: skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Method of Containment and Clean-up Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13)

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.

Eye Protection: Safety spectacles.

Skin Protection: Protective gloves. Protective clothing.

Ingestion: Do not eat, drink, or smoke during handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear solution

Physical State: Liquid

Odor: Not available

Odor Threshold: Not available

pH: 2.55 – 2.95

Boiling Point: Not available

Melting 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: Dilutable

Flash Point: Not available

Viscosity: Not Available

Oxidizing Properties: Not Available

Explosive Properties: Not Available

10. STABILITY AND REACTIVITY

Chemical Stability:	This material is stable under recommended storage 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 avaiable
LD50 Dermal:	No data avaiable
LC50 Inhalation:	No data avaiable

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:	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 (OSHA HCS).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). Hydrogen peroxide (Conc.> 52%) CAS: 7722-84-1.

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	**Hydrogen Peroxide, 30%**
Massachusetts:	Listed
New Jersey:	Listed
Pennsylvania:	Listed
New York:	Listed
Rhode Island:	Listed

International Inventories

Chemical Name	**Hydrogen Peroxide, 30%**
TSCAL:	Listed

DSL:	Listed
NDSL:	Not Listed
EINECS:	Listed
CHINA:	Listed
KECL:	Listed
JAPAN:	Listed
AICS:	Listed

EU Regulations

Annex I Index#:	Hydrogen Peroxide, 30%: 008-003-00-9
Classification:	Not Applicable: The product contains no substances which at their given concentration, are considered to be hazardous to health or the environment as per: GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) CLP Regulation (EC) No 1272/2008
Hazard Statements:	H271: May cause fire or explosion; strong oxidiser H332: Harmful if inhaled H302: Harmful if swallowed H314: Causes severe skin burns and eye damage
Precautionary Statements:	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…
Symbols and Indications of Danger:	GHS03 GHS05 GHS07 Dgr: Danger
Specific Concentration Limits:	Concentration Limits for Hydrogen Peroxide, 30% CAS: 7722-84-1, Ox. Liq. 1; H271: C ≥ 70 %**** Ox. Liq. 2; H272: 50 % ≤ C< 70 % ***** Skin Corr. 1A; H314: C ≥ 70 % Skin Corr. 1B; H314: 50 % ≤ C < 70 % Skin Irrit. 2; H315: 35 % ≤ C < 50 % Eye Dam. 1; H318: 8 % ≤ C < 50 % Eye Irrit. 2; H319: 5 % ≤ C < 8 %
Export and Import	This substance is not listed in the Annex I of Regulation (EC) No 649/2012.
European Priority List	Hydrogen Peroxide, 30% CAS: 7722-84-1 | European Priority Lists and Risk Assessment (Council Regulation (EEC) No 793/93) Information: Rapporteur: Finland Priority List# : 2 ECB# : 022

16. OTHER INFORMATION

The above information is believed to be accurate, complete and current but does not purport to be all inclusive and shall be used as a guide. SeraCare Life Sciences makes no representation or warranties with respect to the product described herein, including but not limited to any implied warranties or merchantability or fitness for a particular use. SeraCare assumes no liability or responsibility and authorizes no other person to assume any additional liability or responsibility as a result of the use of this product or the information contained in the Safety Data Sheet.

Safety Data Sheet

Revision Date: 6/9/2015

SDS # SDS-10058-02

DAB-C Solution

1. PRODUCT AND COMPANY IDENTIFICATION

Product Description:	**Product Code**
Histo, DAB-C Solution	71-00-13

Hazardous Reagent
Histo, DAB-C Solution

Hazardous Reagent Product code
71-00-13

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:

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CANADIAN TRANSPORT EMERGENCY CENTER	Telephone: (1) 613 996 6666	Hours: 24 hours/day, 7 days/week
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Call CHEMTREC Day or Night
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+1 703-527-3887 (collect calls accepted)

2. HAZARD IDENTIFICATION

Hazard Type Health Hazard

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

Classification
Acute Tox. 4 * H302
Acute Tox. 4 * H312
Skin Irrit. 2 H315
Eye Irrit. 2 H319
Muta. 2; Carc. 1B

Hazard Statement
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H350: May cause cancer.
H341: Suspected of causing genetic defects.

Precautionary Statement
P264: Wash skin thoroughly after handling.
P270: Do no eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you

feel unwell.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.
P332 + P313: If skin irritation occurs: Get medical advice/attention.
P337 + P313: If eye irritation persists: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.
P363: Wash contaminated clothing before reuse.
P501: Dispose of contents/container in accordance with local regulation.

Symbols of Danger 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

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

INGESTION: Abdominal pain. Nausea. Vomiting. Diarrhoea. Dizziness. Drowsiness. Confusion. Unconsciousness.

EYES: Redness. Pain. Severe deep burns.

SKIN: MAY BE ABSORBED! Redness

INHALATION: Burning sensation. Cough. Laboured breathing.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CHEMICAL	% Weight	CAS #:
DAB-C Solution	Diethylene glycol	80%	111-46-6
	Catechol	3%	120-80-9
	Biphenyl-3,3',4,4'-tetrayltetraammonium tetrachloride	2.5%	868272-85-9

Classification
Acute Tox. 4 * H302
Acute Tox. 4 * H312
Skin Irrit. 2 H315
Eye Irrit. 2 H319
Muta. 2; Carc. 1B

4. FIRST AID MEASURES

Data for 100% Hazardous Chemical

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:
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	Avoid contact with skin and clothing.
Environmental Precautions	Low hazard to waters. Inform the responsible authorities when very large quantities get into water, drainage, sewer, or the ground.
Method of Containment	Collect leaking and spilled liquid in sealable containers as far as possible.
Methods of Clean-up	Clean-up with copious amounts of water.
Other Information	Not Available

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.

7. HANDLING AND STORAGE

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

Storage: Store at 4°C.

Data for 100% Hazardous Chemical

STORAGE	Dry. Well closed. Separated from strong oxidants.

8. EXPOSURE CONTROL

Data for 100% Hazardous Chemical

•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	Clear, brown colored solution		
Physical State	Liquid	**pH:**	Not Available

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

Chemical Stability Stable

Incompatibility Materials to Avoid Strongly oxidizing substances. The substance should not be stored with substances with which hazardous chemical reactions are possible.

Hazardous Decomposition Products On combustion, forms irritating fumes.

Hazardous Polymerization Will not occur

Data for 100% Hazardous Chemical

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 100% Diethylene Glycol: LD50 oral rat
Value: 12600 mg/kg
Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 25, 1974.

Data for 100% Catechol: LD50 oral rat

Value: 260 mg/kg
Reference: Advances in Food Research. Vol. 3, Pg. 197, 1951.

LD50 Dermal

Data for 100% Diethylene Glycol:
LD50 dermal

Species: Rabbit
Value: 11900 mg/kg
Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 25, 1974.

Data for 100% Catechol: LD50 dermal
Species: Rabbit
Value: 800 mg/kg
Reference: American Industrial Hygiene Association Journal. Vol. 37, Pg. 596, 1976.

LC50 Inhalation Not Available

Chronic Toxicity

Carcinogenicity Catechol CAS# 120-80-9: Health Hazard: Recognized: Carcinogen

Irritation H315: Causes skin irritation.
H319: Causes serious eye irritation.

Corrosivity Not Applicable

Sensitization Not Applicable

Neurological Effects This product contains Catechol CAS# 120-80-9:
which is a suspected Neurotoxicant.

Mutagenic Effects	Not Available
Reproductive Effects	Not Applicable
Developmental Effects	Not Available
Target Organ Effects	Eyes, Skin and Respiratory tract, Gastrointestinal tract
Other adverse effects	EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: Repeated or prolonged contact may cause skin sensitization.

12. ECOLOGICAL MEASURES

Ecotoxicity

Data for 100% Diethylene Glycol: LC50 Fish (96 hours)
Minimum: 75200 mg/l
Maximum: 75200 mg/l
Median: 75200 mg/l
Study number: 1 Reference for median: Geiger, D.L., L.T. Brooke, and D.J. Call 1990. Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas), Volume 5. Ctr.for Lake Superior Environ.Stud., Univ.of Wisconsin-Superior, Superior, WI :332
p.

Data for 100% Catechol: LC50 Fish (96 hours)
Minimum: 3,5 mg/l
Maximum: 9,22 mg/l
Median: 8,9 mg/l
Study number: 6 Reference for median: Bergman, H.L., and A.D. Anderson 1977. Effects of Aqueous Effluents from In Situ Fossil Fuel Processing Technologies on Aquatic Systems. Contract No.EY-77-C-04-3913, Univ.of Wyoming, Laramie, WY :73 p.; DeGraeve, G.M., D.L. Geiger, J.S. Meyer, and H.L. Bergman 1980. Acute and Embryo-Larval Toxicity of Phenolic Compounds to Aquatic Biota. Arch.Environ.Contam.Toxicol. 9(5):557-568

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

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: 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 (OSHA HCS).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains Catechol CAS# 120-80-9 CERCLA RQ: 100 Section13 : 313

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

This product contains Catechol CAS# 120-80-9:
Health Hazard:
Recognized: Carcinogen
Suspected: Cardiovascular or Blood Toxicant, Gastrointestinal or Liver Toxicant, Immunotoxicant, Neurotoxicant, Skin or Sense Organ Toxicant

State Regulations

California Proposition 65:

This product contains the following Proposition 65 chemicals: Catechol: Cancer A (Reproductive and Cancer Hazard Assessment) Date:15-Jul-03

State Right to Know Act

Chemical Name	Diethylene glycol	Catechol	Biphenyl-3,3',4,4'-tetrayltetraammonium tetrachloride
New Jersey	Listed	Not Listed	
Pennsylvania	Listed	Listed	
New York	Listed	Listed	
Rhode Island	Listed	Listed	

International Inventories

Chemical Name	Diethylene glycol	Catechol	Biphenyl-3,3',4,4'-tetrayltetraammonium tetrachloride
TSCA	Listed	Listed	
DSL	Listed	Listed	
NDSL	Not Listed	Not Listed	
EINECS	Listed	Listed	
CHINA	Listed	Listed	
KECL	Listed	Not Listed	
JAPAN:	Listed	Listed	
AICS	Listed	Listed	

EU Regulations

Annex I Index#	Data for 100% Catechol CAS No: 120-80-9: EC No: 204-427-5 INDEX No: 604-016-00-4 Data for 100% Diethylene glycol CAS No: 111-46-6 EC No: 203-872-2 INDEX No: 603-140-00-6
Classification	Acute Tox. 4 * H302 Acute Tox. 4 * H312 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Muta. 2; Carc. 1B
Risk Phrases	H302: Harmful if swallowed. H312: Harmful in contact with skin. H315: Causes skin irritation. H319: Causes serious eye irritation. H350: May cause cancer.

	H341: Suspected of causing genetic defects.
Safety Phrases	P264: Wash skin thoroughly after handling. P270: Do no eat, drink or smoke when using this product. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P330: Rinse mouth. P332 + P313: If skin irritation occurs: Get medical advice/attention. P337 + P313: If eye irritation persists: Get medical advice/attention. P362: Take off contaminated clothing and wash before reuse. P363: Wash contaminated clothing before reuse. P501: Dispose of contents/container in accordance with local regulation.
Symbols and Indications of Danger	Warning
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.

Revision Date: 6/9/2015