

# Safety Data Sheet



Revision Date: 9/3/2014

SDS #: 10086

DAB Reagent Set

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Description:**

DAB Reagent Set

**Product Code**

54-10-00

**Kit Components:**

DAB Solution	71-00-46
Histo, Tris, Dropper	71-00-47
Histo, Peroxidase, Dropper	71-00-48

**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

**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: 7/25/2014

MSDS #: 10201

DAB Solution

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Description:**

**Product Code**

DAB Substrate Solution

71-00-08

DAB Solution

71-00-46

**Hazardous Reagent**

DAB 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  
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## 2. HAZARD IDENTIFICATION

**Hazard Type**

Health Hazard

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

**Classification**

Carcinogenicity, Category 2; H351  
Germ cell mutagenicity (Category 2A); H341  
Acute toxicity, Category 4, oral; H302  
Skin irritation, Category 2; H315  
Eye irritation, Category 2; H319  
Specific Target Organ Toxicity (single exposure), Category 3; H335

**Hazard Statement**

H351: Suspected of causing cancer.  
H341: Suspected of causing genetic defects.  
H302: Harmful if swallowed.  
H315: Causes skin irritation.  
H319: Causes serious eye irritation.  
H335: May cause respiratory irritation.

**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.

**DAB Solution**

P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.  
 Remove contact lenses, if present and easy to do. Continue rinsing.  
 P308+P313: IF exposed or concerned: Get medical advice/attention.  
 P264: Wash skin thoroughly after handling.

**Symbols of Danger**

GHS08  
 GHS07  
 Danger

**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.

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>
DAB Solution	Hydrochloric Acid	3.3%	7647-01-0
	3,3'-Diaminobenzidine	2.5%	7411-49-6
	2,2' -oxybisethanol diethylene glycol	80%	111-46-6

**Classification**

Carcinogenicity, Category 2; H351  
 Germ cell mutagenicity (Category 2A); H341  
 Acute toxicity, Category 4, oral; H302  
 Skin irritation, Category 2; H315  
 Eye irritation, Category 2; H319  
 Specific Target Organ Toxicity (single exposure),  
 Category 3; H335

### 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**

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

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Wear a dust mask. Carefully sweep up, gather and remove. Avoid rising dust. Afterwards ventilate area and wash spill site.
<b>Environmental Precautions</b>	Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Severe hazard to waters. Inform the responsible authorities when only small quantities get into water, drainage, sewer, or the ground.
<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 DISPOSAL</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.
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## 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>	Appropriate engineering controls Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Personal protective equipment: 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). Skin protection - Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without
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**DAB Solution**

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.

Full contact Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** Clear Light brown solution

**Physical State** Liquid **pH:** < 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

**Chemical Stability** Stable under normal conditions

**Incompatibility Materials to Avoid** Strong oxidants.

**Hazardous Decomposition Products** Upon evaporation of water, toxic gases and vapors may be released if involved in a fire.

**Hazardous Polymerization** 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.

**LD50 Oral** LD50 oral rat: 12600 mg/kg  
Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 25, 1974.

**LD50 Dermal** LD50 dermal rat/rabbit: 11900 mg/kg  
Species: Rabbit  
Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 25, 1974.

**LC50 Inhalation** 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 (*Pimephales promelas*), Volume 5. Ctr.for Lake Superior Environ.Stud., Univ.of Wisconsin-Superior, Superior, WI :332 p.

### Chronic Toxicity

**Carcinogenicity** Data for 100% 3,3'-Diaminobenzidine: May Cause Cancer

**DAB Solution**

<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>	Data for 100% 3,3'-Diaminobenzidine: Suspected of causing genetic defects.
<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>	Hydrochloric acid Hazard Class/Division: 8 Identification Number: UN1789
<b>IATA:</b>	Not Available
<b>ADR (road)/ RID (rail):</b>	Not Available
<b>IMDG (sea):</b>	Not Available
<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 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 the following chemical or chemicals which are subject to the reporting requirements of the Clean Air Act, Section 112 HAPS: Hydrochloric Acid CAS 7647-01-0

### **State Regulations**

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

This product contains the following Proposition 65 chemicals: None Listed

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

Chemical Name	Hydrochloric Acid	3,3'-Diaminobenzidine	2,2' - oxybisethanol diethylene glycol
Massachusetts	Not Listed	Listed	Not Listed
New Jersey	Not Listed	Listed	Not Listed
Pennsylvania	Listed	Listed	Not Listed
New York	Not Listed	Listed	Not Listed
Rhode Island	Listed	Listed	Not Listed

### **International Inventories**

Chemical Name	Hydrochloric Acid	3,3'-Diaminobenzidine	2,2' - oxybisethanol diethylene glycol
TSCA	Listed	Listed	Listed
DSL	Listed	Listed	Listed
NDSL	Not Listed	Not Listed	Not Listed
EINECS	Listed	Listed	Listed
CHINA	Listed	Listed	Listed
KECL	Listed	Listed	Not Listed
JAPAN:	Listed	Listed	Listed
AICS	Listed	Listed	Listed

### **EU Regulations**

<b>Annex I Index#</b>	This product is a mixture. Classification is based on 2,2'-oxydiethanol: Annex 1 Index# 603-140-00-6, 100% and 3,3'-Diaminobenzidine (Diaminobenzidine Salt).
<b>Classification</b>	Carcinogenicity, Category 2; H351 Germ cell mutagenicity (Category 2A); H341 Acute toxicity, Category 4, oral; H302 Skin irritation, Category 2; H315 Eye irritation, Category 2; H319 Specific Target Organ Toxicity (single exposure), Category 3; H335
<b>Risk Phrases</b>	H351: Suspected of causing cancer. H341: Suspected of causing genetic defects. H302: Harmful if swallowed.

**DAB Solution**

H315: Causes skin irritation.  
H319: Causes serious eye irritation.  
H335: May cause respiratory irritation.

**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.  
P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313: IF exposed or concerned: Get medical advice/attention.  
P264: Wash skin thoroughly after handling.

**Symbols and Indications of Danger**

GHS08  
GHS07  
Danger

**Specific Concentration Limits**

2,2'-oxybisethanol diethylene glycol CAS 111-46-6: Not Available  
Data for Hydrochloric Acid CAS 7647-01-0:  
Skin Corr. 1B; H314:  $C \geq 25\%$   
Skin Irrit. 2; H315:  $10\% \leq C < 25\%$   
Eye Irrit. 2; H319:  $10\% \leq C < 25\%$   
STOT SE 3; H335:  $C \geq 10\%$   
3,3'-Diaminobenzidine CAS 7411-49-6: Not Available

**Export and Import**

This substance is not listed in the Annex I of Regulation (EC) No 689/2008.

**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: 7/25/2014



# Safety Data Sheet



Revision Date: 9/5/2014

SDS # SDS-10330-01

Tris Buffer (0.1 M)

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Description:**

**Product Code**

Tris Buffer (0.1 M)

71-00-47

**Hazardous Reagent**

Tris Buffer (0.1 M)

**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
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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** Health Hazard

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

**Classification** Skin Irrit. 2; H315  
Eye Irrit. 2; H319  
STOT SE 3; H335:

Specific Target Organ Toxicity (single exposure), Category 3; H335

**Hazard Statement** H315: Causes skin irritation  
H319: Causes serious eye irritation  
H335: May cause respiratory irritation.

**Precautionary Statement** P264: Wash skin thoroughly after handling.  
P271: Use only outdoors or in a well-ventilated area.  
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P332 + P313: If skin irritation occurs: Get medical advice/attention.  
P337 + P313: If eye irritation persists: Get medical advice/attention. Eye irritation  
P362: Take off contaminated clothing and wash before reuse.

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.  
 P405: Store locked up.  
 P501: Dispose of contents/ container t in accordance with local/ regional/ national/ international regulation.

**Symbols of Danger**

GHS05 GHS07 Dgr: 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.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CHEMICAL</u>	<u>% Weight</u>	<u>CAS #:</u>
Tris Buffer (0.1 M)	Hydrochloric Acid	<17%	7647-01-0

**Classification**

Skin Irrit. 2; H315  
 Eye Irrit. 2; H319  
 STOT SE 3; H335:

Specific Target Organ Toxicity (single exposure),  
 Category 3; H335

### 4. FIRST AID MEASURES

**Data for 100% Hazardous Chemical**

<b>Ingestion First Aid:</b>	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.
<b>Inhalation First Aid:</b>	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
<b>Skin First Aid:</b>	First rinse with plenty of water, then remove contaminated clothes and rinse again. Refer for medical attention.
<b>Eye First Aid:</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

**Data For 100% Hazardous Chemical**

<b>Fire Acute Hazard:</b> Not combustible.	<b>Fire Prevention:</b> Not Available	<b>Fire Fighting:</b> In case of fire in the surroundings: use appropriate extinguishing media.
<b>Explosion Acute Hazard:</b> Not Available	<b>Explosion Prevention:</b> Not Available	<b>Explosion Fighting:</b> In case of fire: keep cylinder cool by spraying with water.
<b>CHEMICAL DANGERS:</b> 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.		
<b>PHYSICAL DANGERS:</b> The gas is heavier than air.		

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Avoid contact with skin and clothing.
<b>Environmental Precautions</b>	Not Available
<b>Method of Containment</b>	Collect leaking and spilled liquid in sealable containers as far as possible.
<b>Methods of Clean-up</b>	Clean-up with copious amounts of water.
<b>Other Information</b>	Not Available

### Data for 100% Hazardous Chemical

<b>SPILLAGE DISPOSAL</b>	Evacuate danger area! Consult an expert! Ventilation. Remove gas with fine water spray. Personal protection: complete protective clothing including self-contained breathing apparatus.
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## 7. HANDLING AND STORAGE

<b>Handling:</b>	Handle in accordance with good industrial hygiene and safety practice.
<b>Storage:</b>	Store at 2 - 8°C.

### Data for 100% Hazardous Chemical

<b>STORAGE</b>	Separated from combustible and reducing substances, strong oxidants, strong bases, metals . Keep in a well-ventilated room. Cool. Dry.
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## 8. EXPOSURE CONTROL

### Data for 100% Hazardous Chemical

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

**Engineering Controls** Not Available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Colorless Solution	
<b>Physical State</b>	Liquid	<b>pH:</b> 7.35 - 7.85

### 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
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## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable
<b>Incompatibility Materials to Avoid</b>	Metals, strong oxidizing agents
<b>Hazardous Decomposition Products</b>	Upon evaporation of water, may emit toxic fumes of Hydrogen chloride
<b>Hazardous Polymerization</b>	Will not occur

### Data for 100% Hazardous Chemical

<b>CHEMICAL DANGERS:</b>	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.
<b>PHYSICAL DANGERS:</b>	The gas is heavier than air.

## 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 >2-10% aqueous Hydrochloric Acid: SPECIES: Rat ENDPOINT: LD50 VALUE: 2210 mg/kg Acutely toxic
<b>LD50 Dermal</b>	Data for >2-10% aqueous Hydrochloric Acid: SPECIES: Mouse ENDPOINT: LD50 VALUE: 1449 mg/kg bw Acutely toxic
<b>LC50 Inhalation</b>	Not Available

### Chronic Toxicity

<b>Carcinogenicity</b>	Not Available
<b>Irritation</b>	Not Available
<b>Corrosivity</b>	Data for >2-10% aqueous Hydrochloric Acid: Corrosive to dermal and ocular tissue
<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>	Eyes, Skin and Respiratory tract
<b>Other adverse effects</b>	Not Available

## 12. ECOLOGICAL MEASURES

<b>Ecotoxicity</b>	Data for 100% 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.

<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>	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.
<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>	Data for 100% Hydrochloric Acid: UN Number: 1789 Shipping name: Hydrochloric acid, solution Hazard Identification Number: 80 Class: 8 (Corrosive Substances) Packing Group: II/III (medium/low danger) Danger Label: 8 Tunnel restrictions: Passage forbidden through tunnels of category E.
<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: None Listed

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

This product contains Hydrochloric Acid CAS 7647-01-0 which is 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**

<b>Chemical Name</b>	<b>Hydrochloric Acid</b>
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Massachusetts	Listed
New Jersey	Listed
Pennsylvania	Listed
New York	Listed
Rhode Island	Listed

**International Inventories**

**Chemical Name** Hydrochloric Acid

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# (2) : 017-002-01-X Substance Name in Annex 1 : hydrochloric acid ... %
<b>Classification</b>	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335:
<b>Risk Phrases</b>	Specific Target Organ Toxicity (single exposure), Category 3; H335 H315: Causes skin irritation H319: Causes serious eye irritation H335: May cause respiratory irritation.
<b>Safety Phrases</b>	P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P332 + P313: If skin irritation occurs: Get medical advice/attention. P337 + P313: If eye irritation persists: Get medical advice/attention. Eye irritation P362: Take off contaminated clothing and wash before reuse. P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up. P501: Dispose of contents/ container t in accordance with local/ regional/ national/ international regulation.
<b>Symbols and Indications of Danger</b>	GHS05 GHS07 Dgr: Danger
<b>Specific Concentration Limits</b>	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 649/2012.
<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.).

<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.

Revision Date: 9/5/2014

# Safety Data Sheet



Revision Date: 10/11/2014

Histo, Peroxidase, Dropper Solution

SDS #: SDS-10334-01

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Description:**

Histo, Peroxidase, Dropper Solution

**Product Code**

71-00-48

**Hazardous Reagent**

None

**Hazardous Reagent Product code**

None

**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>
Histo, Peroxidase, Dropper Solution	Not Applicable	Not Applicable	Not Applicable

<b>GHS Classification</b>	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) Regulation (EC) No 1272/2008
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### 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 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



SDS #: SDS-10334-01

**Handling:** Wear appropriate PPE. Refer to section 8.

**Storage:** Store at room temperature (22 – 28°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 Colorless Solution
<b>Physical State</b>	Liquid
<b>Odor</b>	Not Available
<b>Odor Threshold</b>	Not Available
<b>pH</b>	2.6 - 2.95
<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>	Dilutable
<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

SDS #: SDS-10334-01

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 (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)**

SDS #: SDS-10334-01

This product contains no 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: Not Listed

**State Right to Know Act**

**Chemical Name**    **Not Applicable**

**Massachusetts**    Not Applicable  
**New Jersey**        Not Applicable  
**Pennsylvania**      Not Applicable  
**New York**            Not Applicable  
**Rhode Island**       Not Applicable

**International Inventories**

**Chemical Name**    **Not Applicable**

**TSCA**                Not Applicable  
**DSL**                  Not Applicable  
**NDSL**                Not Applicable  
**EINECS**            Not Applicable  
**CHINA**             Not Applicable  
**KECL**                Not Applicable  
**JAPAN:**             Not Applicable  
**AICS**                Not Applicable

**EU Regulations**

**Annex I Index#**                    Not Applicable  
**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)  
Regulation (EC) No 1272/2008  
**Risk Phrases**                      Not Applicable  
**Safety Phrases**                    Not Applicable  
**Symbols and Indications of Danger**    Not Applicable  
**Specific Concentration Limits**        Not Applicable  
**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: 10/11/2014