

**Solulink, Incorporated**  
9853 Pacific Heights Blvd, Suite H  
San Diego, California 92121

Phone: (858) 625-0670  
Fax: (858) 625-0770

DATE: May 29, 2013

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## **MATERIAL SAFETY DATA SHEET**

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### **1. CHEMICAL IDENTIFICATION**

Chemical Name: **S-HyNic (succinimidyl 6-hydrazinonicotinate acetone hydrazone)**  
Molecular Formula:  $C_{13}H_{14}N_4O_4$   
Molecular Weight: 290.2

### **2. COMPOSITION/INGREDIENTS**

CAS Number: Custom synthesized compound. No CAS Number.  
Components: single compound

### **3. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Pale yellow solid  
Percent Purity:  $\geq 90\%$   
Boiling Point: N/A  
Melting Point: N/A  
Freezing Point: N/A  
pH: N/A  
Solubility: N/A  
Vapor Density: N/A  
Vapor Pressure: N/A

### **4. REACTIVITY**

Stability: stable when stored desiccated  
Incompatibility: N/A  
Hazardous Decomposition Components: N/A

### **5. EXPOSURE CONTROLS/EMPLOYEE PROTECTION**

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, and other protective clothing. Safety shower and eye bath required. Mechanical exhaust required. Wash thoroughly after handling.

### **6. HAZARDS IDENTIFICATION**

Precautionary Statement: N/A  
Medical Conditions Aggravated: N/A  
Primary Routes of Entry: N/A  
PEL: N/A  
TLV: N/A  
LD50: N/A  
Carcinogenicity: N/A  
Toxicity: N/A  
RTECS #: N/A  
Acute Effects: N/A  
Chronic Effects: N/A  
Target Organs: N/A

**7. FIRST AID MEASURES**

Eyes: Immediately flush eyes with copious amounts of water for at least 15 minutes

Skin: Immediately wash skin with soap and copious amounts of water

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Other: Wash contaminated clothing before re-use

**8. FIRE FIGHTING MEASURES**

Upper Flammable Limit: N/A

Lower Flammable Limit: N/A

Upper Explosion Limit: N/A

Lower Explosion Limit: N/A

Flashpoint: N/A

Auto ignition Temperature: N/A

Fire Extinguishing Media: N/A

Unusual Fire/Explosion Data: N/A

**9. ACCIDENTAL RELEASE**

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Sweep up, place in a bag, and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**10. HANDLING AND STORAGE**

Store desiccated at or below room temperature.

**11. WASTE DISPOSAL**

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## MATERIAL SAFETY DATA SHEET

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### 1. CHEMICAL IDENTIFICATION

Chemical Name: **S-4FB (succinimidyl-4-formyl benzoate)**  
Molecular Formula:  $C_{12}H_9NO_5$   
Molecular Weight: 247.2

### 2. COMPOSITION/INGREDIENTS

CAS Number: Custom synthesized compound. No CAS Number.  
Components: single compound

### 3. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: white solid  
Percent Purity:  $\geq 90\%$   
Boiling Point: N/A  
Melting Point: N/A  
Freezing Point: N/A  
pH: N/A  
Solubility: N/A  
Vapor Density: N/A  
Vapor Pressure: N/A

### 4. REACTIVITY

Stability: stable when stored desiccated  
Incompatibility: N/A  
Hazardous Decomposition Components: N/A

### 5. EXPOSURE CONTROLS/EMPLOYEE PROTECTION

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, and other protective clothing. Safety shower and eye bath required. Mechanical exhaust required. Wash thoroughly after handling.

### 6. HAZARDS IDENTIFICATION

Precautionary Statement: N/A  
Medical Conditions Aggravated: N/A  
Primary Routes of Entry: N/A  
PEL: N/A  
TLV: N/A  
LD50: N/A  
Carcinogenicity: N/A  
Toxicity: N/A  
RTECS #: N/A  
Acute Effects: N/A  
Chronic Effects: N/A  
Target Organs: N/A

**7. FIRST AID MEASURES**

Eyes: Immediately flush eyes with copious amounts of water for at least 15 minutes

Skin: Immediately wash skin with soap and copious amounts of water

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Other: Wash contaminated clothing before re-use

**8. FIRE FIGHTING MEASURES**

Upper Flammable Limit: N/A

Lower Flammable Limit: N/A

Upper Explosion Limit: N/A

Lower Explosion Limit: N/A

Flashpoint: N/A

Auto ignition Temperature: N/A

Fire Extinguishing Media: N/A

Unusual Fire/Explosion Data: N/A

**9. ACCIDENTAL RELEASE**

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Sweep up, place in a bag, and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**10. HANDLING AND STORAGE**

Store desiccated at or below room temperature.

**11. WASTE DISPOSAL**

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## **MATERIAL SAFETY DATA SHEET**

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### **1. CHEMICAL IDENTIFICATION**

Product Name: 10X Modification Buffer  
Catalog Number: S-4000

### **2. COMPOSITION/INGREDIENTS**

<u>Ingredient name:</u>	<u>CAS Number:</u>	<u>%:</u>
Sodium Phosphate, Dibasic	7558-79-4	25-45
Sodium Chloride	7647-14-5	25-45
Sodium Phosphate, Monobasic	10049-21-5	10-20

### **3. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Clear liquid  
Percent Purity: 100%  
Boiling Point: 100°C  
Freezing Point: 0°C  
pH: 8.0  
Solubility: Aqueous  
Vapor Density: NA  
Vapor Pressure: NA

### **4. HAZARDS IDENTIFICATION**

Emergency Overview:

Avoid contact with skin and clothing. Wash thoroughly after handling.

HMIS Rating:

Health: 1  
Flammability: 0  
Reactivity: 0

NFPA Rating:

Health: 1  
Flammability: 0  
Reactivity: 0

### **5. EXPOSURE CONTROLS/EMPLOYEE PROTECTION**

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, and other protective clothing. Safety shower and eye bath required. Mechanical exhaust required. Wash thoroughly after handling.

### **6. FIRST AID MEASURES**

Eyes: Immediately flush eyes with copious amounts of water for at least 15 minutes

Skin: Immediately wash skin with soap and copious amounts of water

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

Other: Wash contaminated clothing before re-use

**7. FIRE FIGHTING MEASURES**

Upper Flammable Limit:	N/A
Lower Flammable Limit:	N/A
Upper Explosion Limit:	N/A
Lower Explosion Limit:	N/A
Flashpoint:	N/A
Auto ignition Temperature:	N/A
Fire Extinguishing Media:	N/A
Unusual Fire/Explosion Data:	N/A

**8. ACCIDENTAL RELEASE**

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Sweep up, place in a bag, and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**9. HANDLING AND STORAGE**

Store in tightly sealed container at 4°C.

**10. WASTE DISPOSAL**

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, State and local environmental regulations.

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## **MATERIAL SAFETY DATA SHEET**

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### **1. CHEMICAL IDENTIFICATION**

Product Name: 10X Conjugation Buffer  
Catalog Number: S-4002

### **2. COMPOSITION/INGREDIENTS**

<u>Ingredient name:</u>	<u>CAS Number:</u>	<u>%:</u>
Sodium Phosphate, Dibasic	7558-79-4	25-45
Sodium Chloride	7647-14-5	25-45
Sodium Phosphate, Monobasic	10049-21-5	10-20
Sodium Azide	26628-22-8	0.05

### **3. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Clear liquid  
Percent Purity: 100%  
Boiling Point: 100°C  
Freezing Point: 0°C  
pH: 6.0  
Solubility: Aqueous  
Vapor Density: NA  
Vapor Pressure: NA

### **4. HAZARDS IDENTIFICATION**

Emergency Overview:

Avoid contact with skin and clothing. Wash thoroughly after handling.

HMIS Rating:

Health: 1  
Flammability: 0  
Reactivity: 0

NFPA Rating:

Health: 1  
Flammability: 0  
Reactivity: 0

### **5. EXPOSURE CONTROLS/EMPLOYEE PROTECTION**

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, and other protective clothing. Safety shower and eye bath required. Mechanical exhaust required. Wash thoroughly after handling.

### **6. FIRST AID MEASURES**

Eyes: Immediately flush eyes with copious amounts of water for at least 15 minutes

Skin: Immediately wash skin with soap and copious amounts of water

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen  
Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

Other: Wash contaminated clothing before re-use

**7. FIRE FIGHTING MEASURES**

Upper Flammable Limit:	N/A
Lower Flammable Limit:	N/A
Upper Explosion Limit:	N/A
Lower Explosion Limit:	N/A
Flashpoint:	N/A
Auto ignition Temperature:	N/A
Fire Extinguishing Media:	N/A
Unusual Fire/Explosion Data:	N/A

**8. ACCIDENTAL RELEASE**

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Sweep up, place in a bag, and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**9. HANDLING AND STORAGE**

Store in tightly sealed container at 4°C.

**10. WASTE DISPOSAL**

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, State and local environmental regulations.

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**Product Name/Description:** 10X TurboLink Catalyst Buffer

## I. Product and Company Description

Solulink Biosciences  
9853 Pacific Heights Blvd, Ste H.  
San Diego, CA 92121

### For Product Information/Emergency Phone Number:

Emergency Telephone ChemTrec:  
1-800-424-9300 (North America)  
+1-703-527-3887(International)

SoluLink-858.625.0670 (For product use see product data sheet insert)

### Chemical Name or Synonym:

Sodium phosphate buffer containing low concentrations (100 mM) of aniline.

Synonyms for aniline are

Aminophen  
Aniline  
Aniline (Italian, Polish)  
Anilin (Czech)  
Benzamine  
Arylamine  
Aromatic amine  
Phenylamine  
Benzenamine  
Benzidam

**RTECS Number:** BW6650000

## II. Chemical Composition

Aniline Buffer is supplied as a clear aqueous solution containing 50 mM sodium phosphate, 150 mM sodium chloride solution with less than 1% aniline, pH 6.0

Ingredient Name	CAS Number	%	EC number	Classification
Sodium phosphate, monobasic	10049-21-5	0.2%	231-449-2	Xi, R 36/37/38
Sodium phosphate, dibasic	7558-79-4	0.55 %	231-448-7	Xi, R 36/37/38
Sodium chloride	7647-14-5	0.88%	231-598-3	Xi, R 36/37/38
Aniline	62-53-3	0.83%	200-539-3	T, R /23/24/25/40 S 2/28/45
Water	07732-18-5	97.54	N/A	Not controlled

## III. Hazards Identification

NFPA Ratings (Scale 0-4): Health = 3 Fire = 0 Reactivity = 1

#### Major Health Hazards:

Under normal use conditions, product as manufactured is not anticipated to cause major health hazards. May cause skin, eye and respiratory irritation from accidental exposure.

### A. Emergency Overview:

**Information Pertaining To Particular Dangers for Man And Environment:** Refer to sections III, VIII, XII, XV in this document.

**Physical Appearance:** Clear liquid

### B. Potential Health Effects:

#### Acute Health Effects

**Acute Eye:** May cause irritation.

**Acute Skin:** May cause moderate skin irritation.

**Acute Ingestion:** Not considered a likely route of exposure under normal product use conditions. Harmful if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause effects similar to those of acute inhalation.

**Acute Inhalation:** Effects may be delayed. May cause respiratory tract irritation.

**Chronic:** May cause liver and kidney damage. May cause fetal effects. Repeated exposure may cause sensitization dermatitis. Chronic exposure may cause hemolysis of the red blood cells followed by stimulation of the bone marrow. Laboratory experiments have resulted in mutagenic effects. May cause cyanosis - a blue-gray coloring of the skin and lips caused by a lack of oxygen. Animal studies have reported the development of tumors.

## IV. First Aid Measures

### First Aid Measures for Accidental Exposure:

#### Eye Exposure:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. Do NOT allow victim to rub or keep eyes closed. If irritation develops seek medical attention.

#### Skin Exposure:

Immediately wash affected areas with soap and water. If irritation develops seek medical attention. Wash clothing before reuse. Destroy contaminated shoes.

#### Inhalation:

Move to fresh air. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask. SEEK MEDICAL ATTENTION.

#### Ingestion:

Never give fluids or induce vomiting if the victim is unconscious or having convulsions. Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. SEEK MEDICAL ATTENTION.

**Notes to Physician:** Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. Cleansing of the entire contaminated area of the body is of utmost importance. Do not administer alcohol in any form. Individuals with liver or kidney disorders, impaired cardiovascular status, or a history of alcoholism may be more susceptible to the effects of this product. Effects

may be delayed. If cyanosis is severe, intravenous injection of Methylene blue, 1mg/kg of body weight may be of value.

**Antidote:** Methylene blue, alone or in combination with oxygen is indicated as a treatment in nitrite induced methemoglobinemia.

## V. Fire Fighting Measures

### Fire Hazard Data:

**Fire:** materials contained in this product at the indicated concentration are not considered to be a fire hazard.

**Autoignition:** not applicable

**Flash Point:** not applicable

**Flammability Limits (vol/vol%):** not applicable      **Lower:** **Upper:** not applicable

**Extinguishing Media:** Use extinguishing media appropriate for surrounding fire

**Special Fire Fighting Procedures:** Use extinguishing media appropriate for surrounding fire such as water spray, carbon dioxide, dry powder. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus. Avoid inhalation of material or combustion by-products.

**Unusual Fire and Explosion Hazards:** None

## VI. Accidental Release Measures

### Cleanup and Disposal of Spill:

Use standard lab personal protective equipment such as gloves, lab coat, and goggles and wipe spills with absorbent wipes and discard any product, residue, disposable container or liner in full compliance with national or international regulations.

## VII. Handling and Storage

**Handling:** Handle wearing gloves and lab coat. Do not breathe vapor. Avoid contact with eyes, skin, clothing.

**Storage:** Store material refrigerated.

**Special requirements:** Light sensitive

## VIII. Exposure Controls / Personal Protection

### Exposure Guidelines:

#### Engineering Controls:

Safety shower and eye bath. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the MSDS. General room ventilation is satisfactory under anticipated use conditions.

#### Respiratory Protection:

Not required under anticipated use conditions.

#### Eye / Face Protection:

Wear appropriate safety glasses with side shields or chemical goggles as described by OSHA's eye and face protection regulations in 29CFR 1910.133 or European Standard EN166.

#### Skin Protection:

Wear chemical resistant gloves (such as latex or neoprene) and protective clothing to prevent skin contact.

## IX. Physical and Chemical Properties

Component: Aniline Buffer  
Physical Appearance: Clear liquid  
Percent Purity: 100%  
Boiling Point: Not available  
Melting Point: Not available  
Specific gravity: Not available  
Freezing Point: Not Available  
pH: 6.0

## X. Stability and Reactivity

### **Chemical Stability:**

Stable, may be slightly hygroscopic.

### **Conditions to Avoid:**

Temperatures  $<0^{\circ}\text{C}$  or  $>50^{\circ}\text{C}$

### **Materials / Chemicals to Be Avoided:**

Reactive with strong oxidizing agents, metal, acids, alkali

### **Hazardous Decomposition Products:**

Phosphorus oxides may form when heated to decomposition

### **Hazardous Polymerization:**

Unknown

## XI. Toxicological Information

Information for Aniline

### **Route of exposure:**

Skin absorption: toxic if absorbed through skin. Readily absorbed through skin.

Eye contact: Causes severe eye irritation.

Ingestion: toxic if swallowed

Inhalation: Material is irritating to mucous membranes and upper respiratory tract.

Toxic if inhaled.

### **Sensitization;**

Skin: May cause allergic skin reaction.

### **Target Organs:**

Blood, bladder, kidneys, central nervous system.

### **Signs and symptoms of exposure:**

Fatigue. Incoordination. Nausea. Vomiting. Headache. Dizziness.

Symptoms may be delayed. Unconsciousness. Weakness. Confusion. Drowsiness.

Absorption into body leads to methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2-4 hours.

### **Carcinogenicity:**

ACGIH: Classified A3 (proven for animal)

IARC: (not classifiable for human)

OSHA: Not available

**Mutagenic Effects:**

Mutagenic for mammalian somatic cells. Species human, dose 300 umol.L, cell type lymphocyte, mutation test: sister chromatid exchange.

Mutagenic for bacteria and or yeast.

**Developmental toxicity:** not available

**Reproductive effects:** chronic exposure to aniline (6-13 days, pregnant) poses reproductive hazard in mouse at 4.48 g/kg (oral)

**Acute Oral Toxicity:** Oral LD50; Acute: 250 mg/Kg (rat), 464 mg/Kg (mouse);

**Acute Dermal Toxicity:** Dermal (LD50): Acute: 820 mg/Kg (rabbit), 1400 mg/Kg (rat)

**Acute Inhalation Toxicity:** Mouse (LD50) 247.5 ppm

See Hazardous identification

## XII. Ecological Information

**Ecotoxicological Information:** not available

**BOD5 and COD:** not available

**Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. Long term degradation products may arise.

**Toxicity of products of Biodegradation:** Products of degradation are less toxic than the product itself.

## XIII. Disposal Considerations

**Waste Disposal Method:**

Discard any product, residue, disposable container or liner in full compliance with national regulations.

**Container Handling and Disposal:**

Dispose of container and unused contents in accordance with national regulations.

## XIV. Transportation Information

**Shipping Name:** ADR/RID/IMO/ICAO/US DOT

IATA Special Provision - Aqueous solutions containing 1% or less aniline by volume is not subject to these regulations.

**Proper Shipping Name:** Not regulated

**Hazard Class:** Not regulated

**ID Number:** Not regulated

**Packaging Group:** Not regulated

**Hazard label:** Not regulated

**Information reported for product/size:** 3 mL

## XV. Regulatory Information

### U.S. Federal Regulations:

**WARNING: THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.**

California prop, 65; This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: aniline  
to cause birth defects or reproductive harm which requires a warning under the statute: aniline  
California prop, 65; No significant risk level: aniline: 0.1 mg/ml (value)  
Connecticut hazardous material survey: aniline  
Illinois toxic substances disclosure to employee act: aniline  
New York release reporting list: aniline  
Rhode Island RTK: aniline  
Pennsylvania RTK: aniline  
Minnesota: aniline  
Massachusetts RTK: aniline  
New Jersey: aniline  
Louisiana RTK: aniline  
California Director's list of Hazardous substances: aniline

**TSCA**

8(b) inventory: aniline  
8(b) inventory: aniline  
8(b) inventory: aniline  
Chemical Weapons Convention: No TSCA 12(b): No CDTA: Yes

**SARA Title III Hazard Classes:**

SARA 302/304/311/312 extremely hazardous substances: aniline :5000 lbs  
SARA 302/304/311/312 extremely hazardous substances: aniline

CERCLAL Hazardous substances: aniline: 5000 lbs (2268 kg)

**Australian Hazchem Code: 3X**

**Other Regulations:**

**U.S. Federal and State Regulations:**

California prop, 65: This product contains ingredients for which the State of California has found

**European/International Regulations**

**EC Classification T:** Toxic

**EC Risk Phrases:** R2: Keep out of reach of children  
R23 Toxic by inhalation  
R24 Toxic in contact with skin  
R25 Toxic if swallowed  
R40 Limited evidence of a carcinogenic effect

**Safety Phrases:** S2 Keep out of reach of children  
S28 After contact with skin, wash immediately with plenty of water  
S45 In case of accident or if you feel unwell, seek medical advice immediately (show label if possible)

**WHMIS (Canada):**

Class D-1A: Material causing immediate and serious toxic effects (Very toxic)  
Class D-2B: Material causing other toxic effects (Toxic)

## **XVI. Other Information**

### **Key Legend Information:**

**N/A** – Not Applicable  
**ND** – Not Determined  
**ACGIH** – American Conference of Governmental Industrial Hygienists  
**OSHA** – Occupational Safety and Health Administration  
**TLV** – Threshold Limit Value  
**PEL** – Permissible Exposure Limit  
**TWA** – Time Weighted Average  
**STEL** – Short Term Exposure Limit  
**NTP** – National Toxicology Program  
**IARC** – International Agency for Research on Cancer

**The information contained herein is based on the data available to us and is believed to be correct. However Solulink Incorporated makes no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof be obtained from the use thereof.**

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## **MATERIAL SAFETY DATA SHEET**

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### **1. CHEMICAL IDENTIFICATION**

Chemical Name: **DMF, Dimethylformamide**  
Catalog Number: S-4001  
Molecular Formula:  $\text{HCON}(\text{CH}_3)_2$

### **2. COMPOSITION/INGREDIENTS**

CAS Number: 68-12-2  
Components: N,N-Dimethylformamide

### **3. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Colorless liquid  
Percent Purity: 99.8%  
Boiling Point: 153°C  
Melting Point: -61°C  
Vapor Density: 2.5  
Vapor Pressure: 2.6 mm Hg at 20°C  
Specific Gravity: 0.95  
Flash Point: 58°C  
Explosion limits: 2.2% - 15.2%  
Autoignition Temperature: 445°C

### **4. REACTIVITY**

Stability: stable

### **5. EXPOSURE CONTROLS/EMPLOYEE PROTECTION**

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, and other protective clothing. Safety shower and eye bath required. Mechanical exhaust required. Wash thoroughly after handling.

### **6. HAZARDS IDENTIFICATION**

Precautionary Statement: May act as a carcinogen, exposure may result in fetal death. Long term exposure may result in kidney or liver damage  
Primary Routes of Entry: Harmful by inhalation, ingestion of skin contact  
PEL: N/A  
TLV: N/A  
LD50: N/A  
Carcinogenicity: N/A  
Toxicity: N/A  
RTECS #: N/A  
Acute Effects: N/A  
Chronic Effects: N/A  
Target Organs: N/A



7. **FIRST AID MEASURES**

Eyes: Immediately flush eyes with copious amounts of water for at least 15 minutes

Skin: Immediately wash skin with soap and copious amounts of water

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Other: Wash contaminated clothing before re-use

8. **FIRE FIGHTING MEASURES**

Upper Flammable Limit: N/A

Lower Flammable Limit: N/A

Upper Explosion Limit: N/A

Lower Explosion Limit: N/A

Flashpoint: N/A

Auto ignition Temperature: N/A

Fire Extinguishing Media: N/A

Unusual Fire/Explosion Data: N/A

9. **ACCIDENTAL RELEASE**

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Sweep up, place in a bag, and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

10. **HANDLING AND STORAGE**

Store desiccated at or below room temperature.

11. **WASTE DISPOSAL**

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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**Solulink, Incorporated**  
9853 Pacific Heights Blvd, Ste H  
San Diego, California 92121

**Phone: (858) 625-0670**  
**Fax: (858) 546-0020**

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## MATERIAL SAFETY DATA SHEET

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**Product Name/Description:** 2-Hydrazinopyridine.dihydrochloride

**Supplier:** Solulink Inc  
9853 Pacific Heights Blvd, Ste H.  
San Diego, CA 92121

**Manufacturer:** Solulink Inc  
9853 Pacific Heights Blvd, Ste H  
San Diego, CA 92121

**Product Number:** # S-9010-1-08

**Synonym:** 2-HP

**For Product Information/Emergency Phone Number:**

Emergency Telephone ChemTrec:  
1-800-424-9300 (North America)  
+1-703-527-3887(International)  
Solulink-858.625.0670

### II. Chemical Composition

**Component Name:** 2-HP Reagent also known as 2-Hydrazinopyridine dihydrochloride

**Molecular formula:** C<sub>5</sub>H<sub>7</sub>N<sub>3</sub>·2HCl

**Molecular weight:** 181.1

**Physical appearance:** Clear, colorless aqueous liquid

2-HP Reagent is supplied as a 0.5 mM 2-hydrazinopyridine hydrochloride in MES (2-(N-morpholino)ethanesulfonic acid) buffer at pH 6.0.

Ingredient Name	CAS Number	%	EC number	Classification
2- Hydrazinopyridine dihydrochloride	62437-99-4	0.009%	263-541-3	None available
MES (2-(N-morpholino)ethanesulfonic acid)	4432-31-9	1.9%	213-758-4	None available
Water	07732-18-5	98.1%	N/A	Not controlled

### III. Hazards Identification

**OSHA/HSC Status:** While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) at concentrations <1%, this MSDS contains valuable information critical to the safe

handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

**OSHA Hazard:** Irritant

**HMIS Rating (Scale 0-4):** Health = 2    Fire =1    Reactivity = 0

NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

## **A. Emergency Overview:**

**Information Pertaining To Particular Dangers for Man and Environment:** This reagent is not considered hazardous when recommend instructions are used. No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing. Always use appropriate personal protective equipment.

**Physical Appearance:** Clear, colorless aqueous liquid

## **B. Potential Health Effects:**

### **Acute Eye:**

Direct contact may cause irritation with redness

### **Acute Skin:**

Direct contact may cause skin irritation with redness.

### **Acute Inhalation:**

Acute and chronic exposure may cause irritation of the mucous membranes. Symptoms may include tightness and difficulty breathing.

### **Acute ingestion:**

Acute exposure may cause gastrointestinal irritation to the mouth and stomach.

## **IV. First Aid Measures**

### **First Aid Measures for Accidental Exposure:**

#### **Eye Exposure:**

In case of contact with eyes, immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating eye lids.

#### **Skin Exposure:**

In case of skin contact, wash affected areas with soap and water and flush the area with copious amounts of water. Remove contaminated clothing.

#### **Inhalation Exposure:**

In inhaled, move to fresh air. If not breathing, administer artificial respiration. If breathing is difficult, give oxygen or artificial respiration by qualified personnel.

#### **Ingestion Exposure:**

If swallowed, rinse mouth out with water provided person is conscious. Never give fluids or induce vomiting if the victim is unconscious or having convulsions.

## **V. Fire Fighting Measures**

### **Fire Hazard Data:**

**Fire:** This product is not considered to be a fire hazard.

**Auto-ignition:** Unknown

**Flash Point:** Unknown  
**Flammability Limits (vol/vol%):** Unknown  
**Lower:** Unknown  
**Upper:** Unknown

**Extinguishing Media:** Use extinguishing media appropriate for surrounding fire  
**Special Fire Fighting Procedures:** Use extinguishing media appropriate for surrounding fire such as water spray, carbon dioxide, dry powder. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus. Avoid inhalation of material or combustion by-products.

**Unusual Fire and Explosion Hazards:** None

## VI. Accidental Release Measures

### Cleanup and Disposal of Spill:

Use lab personal protective equipment such as gloves, lab coat, goggles and self-contained breathing apparatus. Wipe spills with absorbent wipes and discard any product, residue, disposable container or liner in full compliance with national or international regulations. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

## VII. Handling and Storage

### Handling/Storage:

Do not get into eyes, skin or clothing. Handle wearing gloves. Store material refrigerated and in the dark. Keep container tightly sealed at 2-8°C.

## VIII. Exposure Controls / Personal Protection

### Exposure Guidelines:

Ingredient Name	ACGIH	NIOSH	OSHA-PELs
2-hydrazinopyridine dihydrochloride	No occupational limits established	No occupational limits established	No occupational limits established
MES	No occupational limits established	No occupational limits established	No occupational limits established

### Engineering Controls:

Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the MSDS. General room ventilation is satisfactory under anticipated use conditions.

### Respiratory Protection:

Not required under anticipated use conditions.

### Eye / Face Protection:

Wear appropriate safety glasses with side shields or chemical goggles as described by OSHA's eye and face protection regulations in 29CFR 1910.133 or European Standard EN166.

### Skin Protection:

Wear chemical resistant gloves (such as latex or neoprene) and protective clothing to prevent skin contact.

## IX. Physical and Chemical Properties

**Component:** 2-HP Reagent  
**Physical Appearance:** Clear colorless liquid  
**Percent Purity:** 0.009%  
**Boiling Point:** Not available  
**Melting Point:** Not available  
**Specific gravity:** Not available  
**Freezing Point:** Not Available  
**Vapor pressure:** Not available  
**Vapor density:** Not available  
**Solubility:** aqueous solutions  
**Evaporation rate:** Not available  
**pH:** 6.0

## X. Stability and Reactivity

**Chemical Stability:**

This compound is considered stable under recommended storage conditions.

**Materials / Chemicals to Be Avoided:**

Strong oxidizing agents, Strong acids, Acid chlorides, Acid anhydrides

**Hazardous Decomposition Products:**

Carbon monoxide, carbon dioxide, nitrogen oxides (NO<sub>x</sub>)

**Hazardous Polymerization:** Unknown

## XI. Toxicological Information

### United States

**Acute toxicity/Conclusion/Summary:** To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.

**Chronic toxicity/Conclusion/Summary:** Not available.

**Carcinogenicity/Conclusion/Summary:** Not available.

**Mutagenicity/Conclusion/Summary:** Not available.

**Teratogenicity/Conclusion/Summary:** Not available.

**Reproductive toxicity/Summary:** Not available

## XII. Ecological Information

**Environmental effects:** No data available.

**Aquatic ecotoxicity/Conclusion/Summary:** No data available.

**Other adverse effects:** No data available.

## XIII. Disposal Considerations

**Waste Disposal:** The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Ethylenediaminetetraacetic acid is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act. These regulations apply to discharges of this substance.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Within the present knowledge of the supplier, this product is

not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

#### **XIV. Transportation Information**

##### **DOT**

**Proper Shipping Name:** Not regulated

**UN #:** not regulated

**Hazard Class:** not regulated

**Packaging Group:** Not regulated

**Label Statement:** Not regulated

##### **IATA**

**Proper Shipping Name:** Not regulated

**IATA UN Number:** Not regulated

**Hazard Class:** Not regulated

**Packaging Group:** Not regulated

#### **XV. Regulatory Information**

##### **United States**

##### **U.S. Federal regulations:**

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 –No SARA hazards.

##### **EU Regulations**

Classification: Not classified

#### **XVI. Other Information**

##### **Key Legend Information:**

N/A – Not Applicable

ND – Not Determined

ACGIH – American Conference of Governmental Industrial Hygienists

OSHA – Occupational Safety and Health Administration

TLV – Threshold Limit Value

PEL – Permissible Exposure Limit

TWA – Time Weighted Average

STEL – Short Term Exposure Limit

NTP – National Toxicology Program

IARC – International Agency for Research on Cancer

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San Diego, California 92121

**Phone: (858) 625-0670**  
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## MATERIAL SAFETY DATA SHEET

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**Product Name/Description:** 2-Sulfobenzaldehyde

**Supplier:** Solulink Inc  
9853 Pacific Heights Blvd, Ste H.  
San Diego, CA 92121

**Manufacturer:** Solulink Inc  
9853 Pacific Heights Blvd, Ste H  
San Diego, CA 92121

**Product Number:** # S-9010-1-09

**Synonym:** 2-SBA

**For Product Information/Emergency Phone Number:**

Emergency Telephone ChemTrec:  
1-800-424-9300 (North America)  
+1-703-527-3887(International)  
Solulink-858.625.0670

### II. Chemical Composition

**Component Name:** 2-SBA Reagent also known as 2-Sulfobenzaldehyde

**Molecular formula:**  $C_7H_5O_4SNa \cdot H_2O$

**Molecular weight:** 208.17

**Physical appearance:** Clear, colorless aqueous liquid

2-SBA Reagent is supplied as a 0.5 mM 2-Sulfobenzaldehyde in MES (2-(N-morpholino)ethanesulfonic acid) buffer at pH 6.0.

Ingredient Name	CAS Number	%	EC number	Classification
2-Sulfobenaldehyde	1008-72-6	0.009%	263-541-3	None available
MES (2-(N-morpholino)ethanesulfonic acid)	4432-31-9	1.9%	213-758-4	None available
Water	07732-18-5	98.1%	N/A	Not controlled

### III. Hazards Identification

**OSHA/HSC Status:** While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) at concentrations <1%, this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

**OSHA Hazard:** Irritant

**HMIS Rating (Scale 0-4):** Health = 0    Fire = 0    Reactivity = 0

NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

## **A. Emergency Overview:**

**Information Pertaining To Particular Dangers for Man and Environment:** This reagent is not considered hazardous when recommend instructions are used. No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing. Always use appropriate personal protective equipment.

**Physical Appearance:** Clear, colorless aqueous liquid

## **B. Potential Health Effects:**

### **Acute Eye:**

Direct contact may cause irritation with redness

### **Acute Skin:**

Direct contact may cause skin irritation with redness.

### **Acute Inhalation:**

Acute and chronic exposure may cause irritation of the mucous membranes. Symptoms may include tightness and difficulty breathing.

### **Acute ingestion:**

Acute exposure may cause gastrointestinal irritation to the mouth and stomach.

## **IV. First Aid Measures**

### **First Aid Measures for Accidental Exposure:**

#### **Eye Exposure:**

In case of contact with eyes, immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating eye lids.

#### **Skin Exposure:**

In case of skin contact, wash affected areas with soap and water and flush the area with copious amounts of water. Remove contaminated clothing.

#### **Inhalation Exposure:**

In inhaled, move to fresh air. If not breathing, administer artificial respiration. If breathing is difficult, give oxygen or artificial respiration by qualified personnel.

#### **Ingestion Exposure:**

If swallowed, rinse mouth out with water provided person is conscious. Never give fluids or induce vomiting if the victim is unconscious or having convulsions.

## **V. Fire Fighting Measures**

### **Fire Hazard Data:**

**Fire:** This product is not considered to be a fire hazard.

**Auto-ignition:** Unknown

**Flash Point:** Unknown

**Flammability Limits (vol/vol%):** Unknown

**Lower:** Unknown



**Upper:** Unknown

**Extinguishing Media:** Use extinguishing media appropriate for surrounding fire

**Special Fire Fighting Procedures:** Use extinguishing media appropriate for surrounding fire such as water spray, carbon dioxide, dry powder. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus. Avoid inhalation of material or combustion by-products.

**Unusual Fire and Explosion Hazards:** None

## VI. Accidental Release Measures

### Cleanup and Disposal of Spill:

Use lab personal protective equipment such as gloves, lab coat, goggles and self-contained breathing apparatus. Wipe spills with absorbent wipes and discard any product, residue, disposable container or liner in full compliance with national or international regulations. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

## VII. Handling and Storage

### Handling/Storage:

Do not get into eyes, skin or clothing. Handle wearing gloves. Store material refrigerated and in the dark. Keep container tightly sealed at 2-8°C.

## VIII. Exposure Controls / Personal Protection

### Exposure Guidelines:

Ingredient Name	ACGIH	NIOSH	OSHA-PELs
2-Sulfobenzaldehyde	No occupational limits established	No occupational limits established	No occupational limits established
MES	No occupational limits established	No occupational limits established	No occupational limits established

### Engineering Controls:

Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the MSDS. General room ventilation is satisfactory under anticipated use conditions.

### Respiratory Protection:

Not required under anticipated use conditions.

### Eye / Face Protection:

Wear appropriate safety glasses with side shields or chemical goggles as described by OSHA's eye and face protection regulations in 29CFR 1910.133 or European Standard EN166.

### Skin Protection:

Wear chemical resistant gloves (such as latex or neoprene) and protective clothing to prevent skin contact.

## IX. Physical and Chemical Properties

**Component:** 2-SBA Reagent

**Physical Appearance:** Clear colorless liquid

**Percent Purity:** 0.009%  
**Boiling Point:** Not available  
**Melting Point:** Not available  
**Specific gravity:** Not available  
**Freezing Point:** Not Available  
**Vapor pressure:** Not available  
**Vapor density:** Not available  
**Solubility:** aqueous solutions  
**Evaporation rate:** Not available  
**pH:** 6.0

## X. Stability and Reactivity

### **Chemical Stability:**

This compound is considered stable under recommended storage conditions.

### **Materials / Chemicals to Be Avoided:**

Strong oxidizing agents, Strong acids, Acid chlorides, Acid anhydrides

### **Hazardous Decomposition Products:**

Carbon monoxide, carbon dioxide, nitrogen oxides (NO<sub>x</sub>)

### **Hazardous Polymerization:** Unknown

## XI. Toxicological Information

### United States

**Acute toxicity/Conclusion/Summary:** To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.

**Chronic toxicity/Conclusion/Summary:** Not available.

**Carcinogenicity/Conclusion/Summary:** Not available.

**Mutagenicity/Conclusion/Summary:** Not available.

**Teratogenicity/Conclusion/Summary:** Not available.

**Reproductive toxicity/Summary:** Not available

## XII. Ecological Information

**Environmental effects:** No data available.

**Aquatic ecotoxicity/Conclusion/Summary:** No data available.

**Other adverse effects:** No data available.

## XIII. Disposal Considerations

**Waste Disposal:** The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Ethylenediaminetetraacetic acid is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act. These regulations apply to discharges of this substance.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

## **XIV. Transportation Information**

### **DOT**

**Proper Shipping Name:** Not regulated

**UN #:** not regulated

**Hazard Class:** not regulated

**Packaging Group:** Not regulated

**Label Statement:** Not regulated

### **IATA**

**Proper Shipping Name:** Not regulated

**IATA UN Number:** Not regulated

**Hazard Class:** Not regulated

**Packaging Group:** Not regulated

## **XV. Regulatory Information**

### **United States**

#### **U.S. Federal regulations:**

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 –No SARA hazards.

### **EU Regulations**

Classification: Not classified

## **XVI. Other Information**

### **Key Legend Information:**

N/A – Not Applicable

ND – Not Determined

ACGIH – American Conference of Governmental Industrial Hygienists

OSHA – Occupational Safety and Health Administration

TLV – Threshold Limit Value

PEL – Permissible Exposure Limit

TWA – Time Weighted Average

STEL – Short Term Exposure Limit

NTP – National Toxicology Program

IARC – International Agency for Research on Cancer

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## MATERIAL SAFETY DATA SHEET

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### 1. CHEMICAL IDENTIFICATION

Product Name: 10X PBS Buffer  
Catalog Number: S-4017-002

### 2. COMPOSITION/INGREDIENTS

<u>Ingredient name:</u>	<u>CAS Number:</u>	<u>%:</u>
Sodium Phosphate, Dibasic	7558-79-4	25-45
Sodium Chloride	7647-14-5	25-45
Sodium Phosphate, Monobasic	10049-21-5	10-20
Sodium Azide	26628-22-8	0.05

### 3. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear liquid  
Percent Purity: 100%  
Boiling Point: 100°C  
Freezing Point: 0°C  
pH: 7.2  
Solubility: Aqueous  
Vapor Density: NA  
Vapor Pressure: NA

### 4. HAZARDS IDENTIFICATION

Emergency Overview:

Avoid contact with skin and clothing. Wash thoroughly after handling.

Sodium azide is highly toxic and is readily absorbed through skin. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides.

HMIS Rating:

Health: 4  
Flammability: 0  
Reactivity: 2

NFPA Rating:

Health: 4  
Flammability: 0  
Reactivity: 2

### 5. EXPOSURE CONTROLS/EMPLOYEE PROTECTION

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, and other protective clothing. Safety shower and eye bath required. Mechanical exhaust required. Wash thoroughly after handling.

### 6. FIRST AID MEASURES

Eyes: Immediately flush eyes with copious amounts of water for at least 15 minutes

Skin: Immediately wash skin with soap and copious amounts of water

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

Other: Wash contaminated clothing before re-use

**7. FIRE FIGHTING MEASURES**

Upper Flammable Limit: NA

Lower Flammable Limit: NA

Upper Explosion Limit: NA

Lower Explosion Limit: NA

Flashpoint: NA

Auto ignition Temperature: NA

Fire Extinguishing Media: NA

Unusual Fire/Explosion Data: NA

**8. ACCIDENTAL RELEASE**

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Sweep up, place in a bag, and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**9. HANDLING AND STORAGE**

Store in tightly sealed container at 4°C.

**10. WASTE DISPOSAL**

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, State and local environmental regulations.

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# Material Safety Data Sheet

## 1. Product and company identification

**Product name** : Zeba™ Desalting Resin  
**Synonym** : Zeba™ Desalt Columns; Zeba™ 96-Well Desalt Plates; Chromix™ Desalting Columns; Zeba™ Desalt Columns, 7K MWCO

**Supplier** : Solutlink  
9853 Pacific Heights Blvd  
Suite H  
San Diego, CA 92121  
United States  
858-625-0670  
or  
800.625.0670

**Manufacturer** : Thermo Fisher Scientific  
Pierce Biotechnology  
P.O. Box 117  
Rockford, IL 61105  
United States  
815.968.0747  
800.874.3723

**Product No.** : 0089877 0089877S 0089878 0089882 0089882S 0089883 0089889 0089890 0089891 0089891S 0089892 0089893 0089894 0089934 0089935 1859836 1859836 1859837 1860080 1860739 1861573 1862296

**MSDS #** : 7593  
**Validation date** : 2/26/2010.  
**Print date** : 2/26/2010.  
**Responsible name** : **MSDS Specialist**  
**In case of emergency** : CHEMTREC: **Use of**  
800.424.9300 **Substance/Preparation** Refer to the instruction booklet for  
OUTSIDE US: proper and intended use.  
202.483.7616 Otherwise, contact supplier for  
specific applications.

## 2. Hazards identification

**Physical state** : Liquid. [slurry gel]  
**OSHA/HCS status** : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

**Emergency overview** : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.  
No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.

**Routes of entry** : Eye contact. Inhalation. Ingestion.

**Potential acute health effects**

**Inhalation** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.  
**Skin** : No known significant effects or critical hazards.  
**Eyes** : No known significant effects or critical hazards.

**Potential chronic health effects**

**Chronic effects** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.

2/26/2010.

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Zeba™ Desalting Resin

## 2. Hazards identification

**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

### Over-exposure signs/symptoms

**Inhalation** : No specific data.  
**Ingestion** : No specific data.  
**Skin** : No specific data.  
**Eyes** : No specific data.  
**Medical conditions aggravated by over-exposure** : None known.

The preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments.

**Classification** : Not classified.

See toxicological information (section 11)

## 3. Composition/information on ingredients

Substance/preparation : Preparation

There are no ingredients or additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

#### 4. First aid measures

- Inhalation** : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if symptoms occur. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if symptoms occur. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.
- See section 11 for more detailed information on health effects and symptoms.

2/26/2010.

2/7

Zeba™ Desalting Resin

#### 5. Fire-fighting measures

- Flammability of the product** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Hazardous combustion products** : No specific data.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

#### 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

#### 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

**Zeba™ Desalting Resin****8 . Exposure controls/personal protection****Europe**

No exposure limit value known.

**Consult local authorities for acceptable exposure limits.**

**Recommended monitoring** : If this product contains ingredients with exposure limits, personal, workplace atmosphere **procedures** or biological monitoring may be required to determine the effectiveness of the ventilation

- or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal protection**

- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**9 . Physical and chemical properties**

- Physical state** : Liquid. [slurry gel]
- Color** : White.
- Relative density** : 1.22
- Dispersibility properties** : Easily dispersible in the following materials: cold water and hot water.

**Zeba™ Desalting Resin****10 . Stability and reactivity**

- Chemical stability** : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Will not occur.

**11 . Toxicological information****United States****Acute toxicity**

- Conclusion/Summary** : To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.

**Chronic toxicity**

- Conclusion/Summary** : Not available.



**Carcinogenicity**

Conclusion/Summary : Not available.

**Mutagenicity**

Conclusion/Summary : Not available.

**Teratogenicity**

Conclusion/Summary : Not available.

**Reproductive toxicity**

Conclusion/Summary : Not available.

**Europe**

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

**12 . Ecological information**

Environmental effects : No known significant effects or critical hazards.

**United States**

**Aquatic ecotoxicity**

Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

Zeba™ Desalting Resin

### 13 . Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

### 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*
DOT Classification	Not regulated.	-	-	-
IATA-DGR Class	Not regulated.	-	-	-

PG\* : Packing group

### 15 . Regulatory information

#### United States

- HCS Classification** : Not regulated.
- U.S. Federal regulations** : **United States inventory (TSCA 8b)**: All components are listed or exempted.  
**SARA 302/304/311/312 extremely hazardous substances** : No products were found.  
**SARA 302/304 emergency planning and notification**: No products were found.  
**SARA 302/304/311/312 hazardous chemicals**: No products were found.  
**SARA 311/312 MSDS distribution - chemical inventory - hazard identification**: No products were found.  
**Clean Water Act (CWA) 307**: No products were found.  
**Clean Water Act (CWA) 311**: No products were found.  
**Clean Air Act (CAA) 112 accidental release prevention**: No products were found.  
**Clean Air Act (CAA) 112 regulated flammable substances**: No products were found.  
**Clean Air Act (CAA) 112 regulated toxic substances**: No products were found.

#### Canada

- WHMIS (Canada) Canadian lists** : Not controlled under WHMIS (Canada).  
: **CEPA Toxic substances**: None of the components are listed.  
**Canadian ARET**: None of the components are listed.  
**Canadian NPRI**: None of the components are listed.  
**Alberta Designated Substances**: None of the components are listed.  
**Ontario Designated Substances**: None of the components are listed.  
**Quebec Designated Substances**: None of the components are listed.
- Canada inventory** : **Canada inventory**: All components are listed or exempted.

2/26/2010.

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## 15 . Regulatory information

### EU regulations

**Risk phrases** : This product is not classified according to EU legislation.  
:

### International regulations

**International lists** : **Australia inventory (AICS)**: All components are listed or exempted.  
**China inventory (IECSC)**: All components are listed or exempted.  
**Korea inventory (KECD)**: All components are listed or exempted.  
**Philippines inventory (PICCS)**: All components are listed or exempted.  
**Japan inventory (ENCS)**: All components are listed or exempted.

## 16 . Other information

**Label requirements** : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

**Hazardous Material Information System (U.S.A.)** :

Health	0
Flammability	0
Physical hazards	0

The customer is responsible for determining the PPE code for this material.

**National Fire Protection Association (U.S.A.)** :



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### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.