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## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

**Product Name** Direct Bilirubin Reagent

### Other means of identification

**Product Code(s)** TR33321

**UN-No.** UN1760

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended Use** Other

**Uses advised against** No information available

### Details of the supplier of the safety data sheet

**Supplier Name** Fisher Diagnostics  
A Division of Fisher Scientific Company, LLC  
A Part of Thermo Fisher Scientific, Inc.

**Supplier Address** 8365 Valley Pike  
Middletown, VA 22645-1905

**Supplier Phone Number** Tel: (800) 528-0494

### Emergency telephone number

**Chemical Emergency Phone Number** Chemtrec, US: 800-424-9300  
Chemtrec Outside the US +1-703-741-5970

## 2. HAZARDS IDENTIFICATION


### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)



Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1

**GHS Label elements, including precautionary statements**

<b>Emergency Overview</b>		
<b>Signal word</b>	<b>Danger</b>	
<b>Hazard Statements</b>		
Causes severe skin burns and eye damage May cause an allergic skin reaction		
		
<b>Appearance</b> Clear	<b>Physical state</b> Liquid	<b>Odor</b> Slight

**Precautionary Statements - Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray  
 Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Contaminated work clothing should not be allowed out of the workplace

**Precautionary Statements - Response**

Immediately call a POISON CENTER or doctor/physician  
 Specific treatment (see supplemental first aid instructions on this label)

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a POISON CENTER or doctor/physician

**Skin**

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 Wash contaminated clothing before reuse  
 If skin irritation or rash occurs: Get medical advice/attention

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Immediately call a POISON CENTER or doctor/physician

**Ingestion**

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant



**Hazards not otherwise classified (HNOC)**

Not applicable

**Unknown Toxicity**

0% of the mixture consists of ingredient(s) of unknown toxicity

**Other information**

Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

**Interactions with Other Chemicals**

No information available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	60 - 100	*
Hydrogen chloride	7647-01-0	0.1 - 1	*
Benzenesulfonic acid, 4-amino-	121-57-3	0.1 - 1	*
Sodium hydroxide	1310-73-2	< 0.1	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret

### 4. FIRST AID MEASURES

**First aid measures****General Advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

**Eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

**Skin contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice. May cause an allergic skin reaction.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

**Ingestion**

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

**Self-protection of the first aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

**Most important symptoms and effects, both acute and delayed**

**Most Important Symptoms and Effects** Burning sensation. Itching. Rashes. Hives.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician**

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization of susceptible persons. Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray.

**Unsuitable extinguishing media**

CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical**

Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.).

**Uniform Fire Code**

Corrosive: Acid-Liquid  
Corrosive: Other--Liquid  
Sensitizer: Liquid

**Hazardous Combustion Products**

Carbon oxides.

**Explosion Data**

**Sensitivity to Mechanical Impact** No.

**Sensitivity to Static Discharge** No.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
<b>Other Information</b>	Refer to protective measures listed in Sections 7 and 8.

### Environmental precautions

<b>Environmental precautions</b>	Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.
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### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Pick up and transfer to properly labeled containers. Soak up with inert absorbent material.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

<b>Handling</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.
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### Conditions for safe storage, including any incompatibilities

<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.
<b>Incompatible Products</b>	Acids. Bases. Oxidizing agent.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen chloride 7647-01-0	Ceiling: 2 ppm	Ceiling: 5 ppm Ceiling: 7 mg/m <sup>3</sup>	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m <sup>3</sup>
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> (vacated) Ceiling: 2 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> Ceiling: 2 mg/m <sup>3</sup>

**Other Exposure Guidelines** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)



**Appropriate engineering controls**

<b>Engineering Measures</b>	Showers Eyewash stations Ventilation systems
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**Individual protection measures, such as personal protective equipment**

<b>Eye/face protection</b>	Face protection shield.
<b>Skin and body protection</b>	Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use.

<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>
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**Physical and Chemical Properties**

<b>Physical state</b>	Liquid	<b>Odor</b>	Slight
<b>Appearance</b>	Clear	<b>Odor Threshold</b>	No information available
<b>Color</b>	No information available		
<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks</u></b>	<b><u>Method</u></b>
<b>pH</b>	1.2	None known	
<b>Melting / freezing point</b>	No data available	None known	
<b>Boiling point / boiling range</b>	100 °C / 212 °F	None known	
<b>Flash Point</b>	No data available	None known	
<b>Evaporation Rate</b>	No data available	None known	
<b>Flammability (solid, gas)</b>	No data available	None known	
<b>Flammability Limit in Air</b>			
<b>Upper flammability limit</b>	No data available		
<b>Lower flammability limit</b>	No data available		
<b>Vapor pressure</b>	No data available	None known	
<b>Vapor density</b>	No data available	None known	
<b>Specific Gravity</b>	No data available	None known	
<b>Water Solubility</b>	Soluble in water	None known	
<b>Solubility in other solvents</b>	No data available	None known	
<b>Partition coefficient: n-octanol/water</b>	No data available	None known	
<b>Autoignition temperature</b>	No data available	None known	
<b>Decomposition temperature</b>	No data available	None known	
<b>Kinematic viscosity</b>	No data available	None known	
<b>Dynamic viscosity</b>	No data available	None known	
<b>Explosive properties</b>	No data available		
<b>Oxidizing properties</b>	No data available		

**Other Information**

<b>Softening Point</b>	No data available
<b>VOC Content (%)</b>	No data available
<b>Particle Size</b>	No data available
<b>Particle Size Distribution</b>	

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available.

### Chemical stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing.

### Hazardous Polymerization

Hazardous polymerization does not occur.

### Conditions to avoid

Exposure to air or moisture over prolonged periods.

### Incompatible materials

Acids. Bases. Oxidizing agent.

### Hazardous Decomposition Products

Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

##### **Inhalation**

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

##### **Eye contact**

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

##### **Skin contact**

Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.

##### **Ingestion**

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

#### Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg ( Rat )	-	-



7732-18-5			
Hydrogen chloride 7647-01-0	= 700 mg/kg ( Rat )	> 5010 mg/kg ( Rabbit )	= 3124 ppm ( Rat ) 1 h
Benzenesulfonic acid, 4-amino- 121-57-3	= 12300 mg/kg ( Rat )	-	-
Sodium hydroxide 1310-73-2	-	= 1350 mg/kg ( Rabbit )	-

### Information on toxicological effects

**Symptoms** Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Sensitization** May cause sensitization of susceptible persons. May cause sensitization by skin contact.

**Mutagenic Effects** No information available.

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Hydrogen chloride 7647-01-0		Group 3		

*IARC (International Agency for Research on Cancer)  
Group 3 - Not Classifiable as to Carcinogenicity in Humans*

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Chronic Toxicity** No known effect based on information supplied. Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Carcinogenic potential is unknown.

**Target Organ Effects** Respiratory system. Eyes. Skin. Gastrointestinal tract (GI).

**Aspiration Hazard** No information available.

### Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

**ATEmix (inhalation-dust/mist)**

57.92 mg/l

**ATEmix (inhalation-vapor)**

347.00 ATEmix



## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Harmful to aquatic life.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Hydrogen chloride 7647-01-0		96h LC50: = 282 mg/L (Gambusia affinis)		
Benzenesulfonic acid, 4-amino- 121-57-3	72h EC50: = 91 mg/L (Desmodesmus subspicatus)	96h LC50: 77.8 - 129.6 mg/L (Pimephales promelas)	EC50 = 114 mg/L 30 min EC50 = 43.5 mg/L 5 min EC50 = 60.1 mg/L 15 min	48h EC50: = 85.66 mg/L
Sodium hydroxide 1310-73-2		96h LC50: = 45.4 mg/L (Oncorhynchus mykiss)		

### Persistence and Degradability

No information available.

### Bioaccumulation

Chemical Name	Log Pow
Benzenesulfonic acid, 4-amino- 121-57-3	-0.9

### Other adverse effects

No information available.

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Disposal methods</b>	This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).
<b>Contaminated Packaging</b>	Dispose of contents/containers in accordance with local regulations.
<b>US EPA Waste Number</b>	D002

### **California Hazardous Waste Codes 791**

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Sodium hydroxide 1310-73-2	Toxic Corrosive

## 14. TRANSPORT INFORMATION

### DOT

<b>UN-No.</b>	UN1760
<b>Proper Shipping Name</b>	CORROSIVE LIQUIDS, N.O.S.
<b>Hazard Class</b>	8
<b>Packing Group</b>	III
<b>Description</b>	UN1760, Corrosive liquids, n.o.s. (Hydrogen chloride), 8, III



**Emergency Response Guide Number** 154

**TDG**

**UN-No.** UN1760  
**Proper Shipping Name** Corrosive liquid, n.o.s.  
**Hazard Class** 8  
**Packing Group** III  
**Description** UN1760, Corrosive liquid, n.o.s. (Hydrogen chloride), 8, III

**MEX**

**UN-No.** UN1760  
**Proper Shipping Name** Corrosive liquid, n.o.s.  
**Hazard Class** 8  
**Packing Group** III  
**Description** UN1760, Corrosive liquid, n.o.s. (Hydrogen chloride), 8, III

**ICAO**

**UN-No.** UN1760  
**Proper Shipping Name** Corrosive liquid, n.o.s.  
**Hazard Class** 8  
**Packing Group** III  
**Description** UN1760, Corrosive liquid, n.o.s. (Hydrogen chloride), 8, III

**IATA**

**UN-No.** UN1760  
**Proper Shipping Name** Corrosive liquid, n.o.s.  
**Hazard Class** 8  
**Packing Group** III  
**Description** UN1760, Corrosive liquid, n.o.s. (Hydrogen chloride), 8, III

**IMDG/IMO**

**UN-No.** UN1760  
**Proper Shipping Name** Corrosive liquid, n.o.s.  
**Hazard Class** 8  
**Packing Group** III  
**EmS-No.** F-A, S-B  
**Description** UN1760, Corrosive liquid, n.o.s. (Hydrogen chloride), 8, III

**RID**

**UN-No.** UN1760  
**Proper Shipping Name** Corrosive liquid, n.o.s.  
**Hazard Class** 8  
**Packing Group** III  
**Classification code** C9  
**Description** UN1760, Corrosive liquid, n.o.s. (Hydrogen chloride), 8, III

**ADR**

**UN-No.** UN1760  
**Proper Shipping Name** Corrosive liquid, n.o.s.  
**Hazard Class** 8  
**Packing Group** III  
**Classification code** C9  
**Tunnel restriction code** (E)  
**Description** UN1760, Corrosive liquid, n.o.s. (Hydrogen chloride), 8, III

**ADN**

**UN-No.** UN1760  
**Proper Shipping Name** Corrosive liquid, n.o.s.  
**Hazard Class** 8

<b>Packing Group</b>	III
<b>Classification code</b>	C9
<b>Special Provisions</b>	274
<b>Description</b>	UN1760, Corrosive liquid, n.o.s. (Hydrogen chloride), 8, III
<b>Hazard Labels</b>	8
<b>Limited Quantity</b>	5 L

## 15. REGULATORY INFORMATION

### International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

### US Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Hydrogen chloride - 7647-01-0	7647-01-0	0.1 - 1	1.0

#### **SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire Hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

#### **CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrogen chloride 7647-01-0	5000 lb			X
Sodium hydroxide 1310-73-2	1000 lb			X

#### **CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Hydrogen chloride 7647-01-0	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 kg final RQ
Sodium hydroxide 1310-73-2	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

### US State Regulations

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

#### **U.S. State Right-to-Know Regulations**

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Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Hydrogen chloride 7647-01-0	X	X	X	X	X
Sodium hydroxide 1310-73-2	X	X	X	X	

**International Regulations**

Component	Carcinogen Status	Exposure Limits
Hydrogen chloride 7647-01-0 ( 0.1 - 1 )		Mexico: Ceiling 5 ppm Mexico: Ceiling 7 mg/m <sup>3</sup>
Sodium hydroxide 1310-73-2 ( < 0.1 )		Mexico: Ceiling 2 mg/m <sup>3</sup>

**Canada**  
**WHMIS Hazard Class**  
 E - Corrosive material  
 D2B - Toxic materials



**16. OTHER INFORMATION**

<b>NFPA</b>	<b>Health Hazards</b> 3	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Physical and Chemical Hazards - Personal Protection</b> X
<b>HMIS</b>	<b>Health Hazards</b> 3	<b>Flammability</b> 0	<b>Physical Hazard</b> 0	

**Prepared By** Product Stewardship  
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**Revision Note** No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**

