


## SECTION 1: Identification

<b>Product identifier</b>	
Product name	Sulfide 1 - Reagent B
Product number	R-8025B
<b>Recommended use and restrictions</b>	To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.
<b>Manufacturer</b>	Taylor Technologies, Inc. 31 Loveton Circle Sparks, MD 21152 Phone: (410) 472-4340 Emergency phone: (800) 837-8548

## SECTION 2: Hazard(s) identification

<b>Physical hazards</b>	Corrosive to metals	Category 1
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Eye damage/irritation	Category 1
	Skin corrosion/irritation	Category 1B
	Specific target organ toxicity, single exposure	Category 3 Respiratory tract irritation
<b>Environmental hazards</b>	No data available	
<b>Label elements</b>		
Hazard pictograms		
Signal word	Danger	
Hazard statements	May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation.	
Precautionary statements		
Prevention	Keep only in original container. Do not breathe mist or vapors. Wash skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur.	
Response	Absorb spillage to prevent material damage. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a physician or poison control center if you feel unwell. IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a physician or poison control center. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a physician or poison control center.	
Storage	Store in corrosive-resistant container with a corrosive-resistant inner liner. Keep tightly capped. Store out of direct sunlight between 36°F–85°F. Store in a well-ventilated place. Store locked up.	
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.	
<b>Hazards not otherwise classified</b>	No data available	

### SECTION 3: Composition/information on ingredients

#### Mixture

Chemical name	Common name and synonyms	CAS number	%
Iron (III) chloride hexahydrate	Ferric chloride hexahydrate	10025-77-1	45–55
Water	Dihydrogen oxide	7732-18-5	45–55
Hydrochloric acid	Not available	7647-01-0	0.1–5

### SECTION 4: First-aid measures

#### If inhaled

Remove individual to fresh air. Seek medical attention if breathing becomes difficult or if respiratory irritation develops. Give oxygen or artificial respiration if needed.

#### In case of skin contact

Immediately flush skin with plenty of water for at least 20 minutes. If clothing comes in contact with the product, the clothing should be removed and laundered before reuse. Seek medical attention if irritation develops. Chemical burns must be treated by a physician.

#### In case of eye contact

Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

#### If swallowed

Call a physician or poison control center immediately. Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs.

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

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

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

Provide general supportive measures and treat symptomatically.

Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep person under observation. Symptoms may be delayed.

#### General information

Ensure medical personnel are aware of the material(s) involved and take precautions to protect themselves.

### SECTION 5: Firefighting measures

#### Extinguishing media

Suitable extinguishing media Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media Do not use a heavy water stream. Use of heavy stream of water may spread fire.

#### Specific hazards arising from the substance or mixture

Fire hazard Not flammable

Explosion hazard Not explosive

Reactivity May be corrosive to metals

Hazardous combustion products Hydrogen chloride gas

#### Advice for firefighters

Precautionary measures Exercise caution when fighting any chemical fire; hazardous fumes will be present.

Firefighting equipment/instructions Use water spray or fog for cooling exposed containers.

Protection during firefighting Do not enter fire area without proper protective equipment, including respiratory protection.

Other information Refer to section 9 of the SDS for flammability properties.

### SECTION 6: Accidental release measures

#### Personal precautions, protective equipment, and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during cleanup. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protective equipment, refer to section 8 of the SDS.

#### Environmental precautions

Avoid discharge into drains, watercourses, or onto the ground.

## Methods and material for containment and cleaning up

Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewers, basements, or confined areas. Following product recovery, flush area with water. Small Spills: Absorb spillage with noncombustible, absorbent material. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for reuse. Dilute acid with water and neutralize with dilute base. If not recoverable, dilute with water or flush to holding area and neutralize. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## Reference to other sections

For exposure controls and personal protection, refer to section 8 of the SDS. For waste disposal, refer to section 13 of the SDS.

## SECTION 7: Handling and storage

### Personal precautions, protective equipment, and emergency procedures

Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. For personal protective equipment, refer to section 8 of the SDS. Keep away from incompatibles. Observe good industrial hygiene practices. Label containers appropriately.

### Conditions for safe storage, including any incompatibilities

Store in corrosive-resistant container with a corrosive-resistant inner liner. Keep tightly capped. Store out of direct sunlight between 36°F–85°F. Store in a well-ventilated place. Store locked up. Store away from incompatible materials (refer to section 10 of the SDS).

## SECTION 8: Exposure controls/personal protection

### Occupational exposure limits

#### ACGIH Threshold Limit Values

Components	Type	Value	Form
Hydrochloric acid (CAS 7647-01-0)	Ceiling	2 ppm	Not applicable

#### NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Hydrochloric acid (CAS 7647-01-0)	Ceiling	1 mg/m <sup>3</sup>	Not applicable
		7 mg/m <sup>3</sup>	Not applicable

#### OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Hydrochloric acid (CAS 7647-01-0)	Ceiling	1 mg/m <sup>3</sup>	Not applicable
		7 mg/m <sup>3</sup>	Not applicable

**Biological limit values** No biological exposure limits noted for the ingredient(s)

### Exposure controls

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eyewash facilities and emergency shower must be available when handling this product.

Personal protective equipment

Eye/face protection Wear appropriate chemical safety goggles if contact is likely to occur.  
Skin protection Wear appropriate chemical-resistant gloves and clothing if contact is likely to occur.  
Body protection Wear appropriate protective clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fumes at levels exceeding the exposure limits. Advice should be sought from respiratory protection suppliers.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Physical state	Liquid
Form	Liquid
Color	Dark, amber
Odor	Odorless
Odor threshold	No data available
pH	No data available

Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	212°F (100°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	1.3
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

## SECTION 10: Stability and reactivity

<b>Reactivity</b>	May be corrosive to metals
<b>Chemical stability</b>	Stable under recommended handling and storage conditions (refer to section 7 of the SDS)
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use
<b>Conditions to avoid</b>	Contact with incompatible materials. Do not use in areas without adequate ventilation.
<b>Incompatible materials</b>	Cesium carbide, metals, potassium, sodium, and strong oxidizing agents

## SECTION 11: Toxicological information

### Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	Causes severe skin burns
Eye contact	Causes serious eye damage
Ingestion	Harmful if swallowed. Causes digestive tract burns.

### Most important symptoms/effects, acute and delayed

Direct skin contact may cause corrosive skin burns, deep ulcerations, and possibly permanent scarring.

Direct contact with concentrated solutions may be corrosive to the eyes and may cause severe damage, including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Inhalation of mists can cause severe respiratory irritation. Symptoms may include coughing, choking, and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.

Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus, and possibly the digestive tract. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding.

**Acute toxicity** Harmful if swallowed. See below for acute toxicity estimate (ATE) and individual ingredient acute toxicity data.

Mixture	Species	Test Results
Sulfide 1 - Reagent B (CAS Mixture)		
<b>Acute</b>		
<i>Oral</i>		
LD <sub>50</sub>	Rat	1669.57 mg/kg
<b>Components</b>	<b>Species</b>	<b>Test Results</b>
Hydrochloric acid (7647-01-0)		
<b>Acute</b>		
<i>Dermal</i>		
LD <sub>50</sub>	Mouse	1449 mg/kg

#### Inhalation

LC <sub>50</sub>	Mouse	1108 ppm, 1 hour
LD <sub>50</sub>	Rat	3124 ppm, 1 hour

#### Oral

LD <sub>50</sub>	Rabbit	900 mg/kg
LD <sub>50</sub>	Rat	238–277 mg/kg

<b>Respiratory or skin sensitization</b>	No data available
<b>Germ cell mutagenicity</b>	No data available
<b>Carcinogenicity</b>	No data available
<b>Reproductive toxicity</b>	No data available
<b>Specific target organ toxicity (single exposure)</b>	May cause respiratory irritation
<b>Specific target organ toxicity (repeated exposure)</b>	No data available
<b>Aspiration hazard</b>	No data available

### SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

### SECTION 13: Disposal considerations

Collect and reclaim or dispose of in sealed containers at a licensed waste disposal site. Since emptied containers may retain product residue, follow label warnings even after container is emptied. This material and its container must be disposed of in a safe manner. Dispose of contents/container in accordance with local/regional/national/international regulations.

### SECTION 14: Transport information

#### DOT

UN number	UN3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, N.O.S. (Hydrochloric acid; Ferric chloride)
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging, non-bulk	202
Packaging, bulk	242

#### IATA

UN number	UN3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, N.O.S. (Hydrochloric acid; Ferric chloride)
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	Not listed
ERG code	8L
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed

#### IMDG

UN number	UN3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, N.O.S. (Hydrochloric acid; Ferric chloride)
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	
Marine pollutant	Not listed
EmS	F-A, S-B

Special precautions for user Read safety instructions, SDS, and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

This substance/mixture is not intended to be transported in bulk.

DOT



IATA; IMDG



## SECTION 15: Regulatory information

### U.S. federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### **CERCLA Hazardous Substance (40 CFR 302.4)**

Hydrochloric acid (7647-01-0)

#### **Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAP)**

Hydrochloric acid (7647-01-0)

#### **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Hydrochloric acid (7647-01-0)

#### **DEA List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))**

Hydrochloric acid (7647-01-0)

#### **DEA List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2))**

Hydrochloric acid (7647-01-0)

#### **SARA 302 Extremely Hazardous Substance**

Hydrochloric acid (7647-01-0)

#### **SARA 304 Emergency Release Notification**

Hydrochloric acid (7647-01-0)

#### **SARA 313 (TRI Reporting)**

Hydrochloric acid (7647-01-0)

### U.S. state regulations

#### **Massachusetts Right-to-Know Act**

Hydrochloric acid (7647-01-0)

#### **New Jersey Worker and Community Right-to-Know Act**

Hydrochloric acid (7647-01-0)

#### **Pennsylvania Worker and Community Right-to-Know Act**

Hydrochloric acid (7647-01-0)

#### **Rhode Island Right-to-Know Act**

Hydrochloric acid (7647-01-0)

## SECTION 16: Other information

### NFPA Rating

Health hazard	1
Fire hazard	0
Reactivity	0
Specific	ACID

### Disclaimer

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