



# Sulfurglas Hardener

## SECTION 1. IDENTIFICATION

<b>Product Identifier</b>	Sulfurglas Hardener
<b>Other Means of Identification</b>	Epoxy Hardener
<b>Product Family</b>	Amine
<b>Recommended Use</b>	Mixed with another component to form a corrosion-resistant membrane.
<b>Restrictions on Use</b>	None known.
<b>Manufacturer/Supplier Identifier</b>	The Stebbins Engineering and Manufacturing Company, 363 Eastern Boulevard, Watertown, NY, 13601, (315) 782-3000, www.stebbinseng.com
<b>Emergency Phone No.</b>	Chemtrec - Within North America, 1-800-424-9300, 24 hours Stebbins 24 Hour Contact-, 1-315-788-6624
<b>SDS No.</b>	040
<b>Date of Preparation</b>	September 22, 2015

## SECTION 2. HAZARD IDENTIFICATION

### Classification

Acute toxicity (Inhalation) - Category 2; Skin corrosion - Category 1B; Serious eye damage - Category 1; Skin sensitization - Category 1; Reproductive toxicity - Category 2; Specific target organ toxicity (single exposure) - Category 3

### Label Elements



Signal Word:

Danger

Hazard Statement(s):

- H302 + H312 Harmful if swallowed or in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H335 May cause respiratory irritation.
- H360 May damage the unborn child.
- H361 Suspected of damaging fertility.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary Statement(s):

Prevention:

- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust, fume, gas, mist, vapours or spray.
- P264 Wash hands and skin thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection. NIOSH approved air-purifying respirator with an organic vapour cartridge  
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 P302 + P352 IF ON SKIN: Wash with plenty of water.  
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P308 + P313 IF exposed or concerned: Get medical advice/attention.  
 P273 Avoid release to the environment.

**Storage:**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

**Disposal:**

P501 Dispose of contents and container in accordance with local, regional, national and international regulations.

**Other Hazards**

May be a health hazard in confined spaces. Hazardous to the environment.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Mixture:

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Triethylenetetramine mixture	90640-67-8	<98.5%	-	
Tetraethylenepentamine mixture	112-57-2	< 2.0 %	-	
Aminoethylethanolamine	111-41-1	<2.0%	-	

**SECTION 4. FIRST-AID MEASURES**

**First-aid Measures**

**Inhalation**

Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Remove source of exposure or move to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. If breathing has stopped, trained personnel should begin rescue breathing. If the heart has stopped, trained personnel should start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED).

**Skin Contact**

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes. If skin irritation or a rash occurs, get medical advice or attention. Clean clothing, shoes and leather goods.

**Eye Contact**

Avoid direct contact. Wear chemical protective gloves if necessary. Remove contact lenses, if present and easy to do. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. If necessary, continue flushing during transport to hospital.

**Ingestion**

If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. Immediately call a Poison Centre or doctor.

**First-aid Comments**

Product Identifier: Sulfurglas Hardener - Ver. 4  
 Date of Preparation: September 22, 2015  
 Date of Last Revision: May 05, 2020

SDS No.: 040

Page 02 of 08

If exposed or concerned, get medical advice or attention. Some of the first-aid procedures recommended here require advanced first-aid training.

### **Most Important Symptoms and Effects, Acute and Delayed**

In sensitized people, exposure to a very small amount of product can cause symptoms including wheezing, difficult breathing, sneezing and runny or blocked nose. Can cause death. Symptoms can develop immediately following exposure or hours later. Repeated exposure will make the reaction worse. Aspiration hazard. If swallowed: may be drawn into the lungs if swallowed or vomited, causing severe lung damage. Death can result.

### **Immediate Medical Attention and Special Treatment**

#### **Target Organs**

Eyes, skin, respiratory system, liver, kidneys, nervous system.

#### **Special Instructions**

Not applicable.

#### **Medical Conditions Aggravated by Exposure**

Asthma, eye conditions, kidney conditions, liver conditions, respiratory conditions, skin allergies.

## **SECTION 5. FIRE-FIGHTING MEASURES**

### **Extinguishing Media**

#### **Suitable Extinguishing Media**

Not combustible. Use extinguishing agent suitable for surrounding fire. Use water to keep non-leaking, fire-exposed containers cool.

Small fire: Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Large fire: Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

#### **Unsuitable Extinguishing Media**

Do not use water jet.

### **Specific Hazards Arising from the Product**

Review Section 10 (Stability and Reactivity) for additional information.

In a fire, the following hazardous materials may be generated: corrosive chemicals; very toxic carbon monoxide, carbon dioxide; corrosive, oxidizing nitrogen oxides; corrosive, flammable ammonia.

### **Special Protective Equipment and Precautions for Fire-fighters**

Evacuate area. Approach fire from upwind to avoid hazardous vapours or gases. Knock down vapours or gases with water fog or fine water spray. Dike and recover contaminated water for appropriate disposal.

Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment, and Emergency Procedures**

Emergency responders: evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Evacuate downwind locations. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

### **Environmental Precautions**

It is good practice to prevent releases into the environment. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

### **Methods and Materials for Containment and Cleaning Up**

Small spills or leaks: stop or reduce leak if safe to do so. Contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Contaminated absorbent poses the same hazard as the spilled product. Large spills or leaks: dike spilled product to prevent runoff. Contain and soak up spill with absorbent that does not react with spilled product. Get expert advice before treating the spilled product with other chemicals to make it less hazardous. Store recovered product in suitable containers that are: covered, corrosion-resistant. Contact emergency services and manufacturer/supplier for advice.

### **Other Information**

Product Identifier: Sulfurglas Hardener - Ver. 4

SDS No.: 040

Date of Preparation: September 22, 2015

Date of Last Revision: May 05, 2020

Page 03 of 08

Report spills to local health, safety and environmental authorities, as required.

## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Obtain special instructions before use. Avoid breathing in this product. Avoid repeated or prolonged skin contact. Do not get in eyes, on skin or on clothing. Only use where there is adequate ventilation. Keep containers tightly closed when not in use or empty. Do NOT eat, drink or store food in work areas. Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area.

### Conditions for Safe Storage

Store in an area that is: ventilated, cool, separate from incompatible materials (see Section 10: Stability and Reactivity).

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Organic amine mixture	1 ppm Skin				6 mg/m <sup>3</sup> Skin	

ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. AIHA® = AIHA® Guideline Foundation. WEEL® = Workplace Environmental Exposure Limit. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit.

### Appropriate Engineering Controls

Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Exhaust directly to the outside, taking any necessary precautions for environmental protection. Provide eyewash in work area, if contact or splash hazard exists.

### Individual Protection Measures

#### Eye/Face Protection

Wear chemical safety goggles.

#### Skin Protection

Chemical safety goggles. A face shield may also be necessary. Wear chemical protective clothing e.g. gloves, aprons, boots.

Suitable materials are: butyl rubber, natural rubber, neoprene rubber, nitrile rubber.

#### Respiratory Protection

Not normally required if product is used as directed. Wear a NIOSH approved air-purifying respirator with an organic vapour cartridge.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

<b>Appearance</b>	Clear amber. Colour darkens on exposure to. Particle Size: Not applicable
<b>Odour</b>	Fishy
<b>Odour Threshold</b>	Not available
<b>pH</b>	11.5 (100% solution)
<b>Melting Point/Freezing Point</b>	Not available (melting); -31 °F (-35 °C) (freezing)
<b>Boiling point/Initial boiling point</b>	>= 530 °F (277 °C)
<b>Boiling Range</b>	Not applicable
<b>Flash Point</b>	>= 298 °F (148 °C)
<b>Evaporation Rate</b>	Not available
<b>Flammability (solid, gas)</b>	Not applicable

Product Identifier: Sulfurglas Hardener - Ver. 4

SDS No.: 040

Date of Preparation: September 22, 2015

Date of Last Revision: May 05, 2020

Page 04 of 08

<b>Upper/Lower Flammability or Explosive Limit</b>	9.5% (upper); 1% (lower)
<b>Vapour Pressure</b>	< 0.01 kPa (0.08 mm Hg)
<b>Vapour Density (air = 1)</b>	5.0
<b>Relative Density (water = 1)</b>	~ 0.98 at 68 °F (20 °C)
<b>Solubility</b>	Soluble in water; Not available (in other liquids)
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not available
<b>Auto-ignition Temperature</b>	561 °F (294 °C)
<b>Decomposition Temperature</b>	>= 530 °F (277 °C)
<b>Viscosity</b>	Not available (kinematic); 20 - 23 mPa.s at 77 °F (25 °C) (dynamic)
<b>Other Information</b>	
<b>Physical State</b>	Liquid
<b>Molecular Formula</b>	Not applicable
<b>Molecular Weight</b>	Not applicable
<b>Bulk Density</b>	63.62 lb/ft <sup>3</sup> (1019.10 kg/m <sup>3</sup> )
<b>Surface Tension</b>	Not available
<b>Critical Temperature</b>	Not available
<b>Electrical Conductivity</b>	Not applicable
<b>Vapour Pressure at 50 deg C</b>	Not available
<b>Saturated Vapour Concentration</b>	Not available

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions of use.

### Chemical Stability

Normally stable.

### Possibility of Hazardous Reactions

Reacts in the presence of metals, acidic conditions (low pH), alkaline conditions (high pH), oxidizing agents.

### Conditions to Avoid

Prolonged exposure to high temperatures. Avoid long term exposure to vapours. Incompatible materials. Temperatures above 298.0 °F (147.8 °C)

### Incompatible Materials

Releases excessive heat on contact with: water. Avoid: oxidizing agents (e.g. peroxides), strong acids (e.g. hydrochloric acid), aldehydes (e.g. acetaldehyde), alcohols (e.g. ethanol), aromatic hydrocarbons (e.g. toluene), ketones (e.g. acetone), nitriles (e.g. butyronitrile), peat moss, saw dust, metals (e.g. aluminum).

Copper, copper alloys (e.g. brass and/or bronze).

### Hazardous Decomposition Products

Reactive chemicals; corrosive, flammable ammonia; oxygen (a strong oxidizer). volatile amines.

## SECTION 11. TOXICOLOGICAL INFORMATION

Information presented below is for the entire product, unless otherwise specified.

### Likely Routes of Exposure

Inhalation; skin absorption; eye contact; ingestion.

### Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
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Product Identifier: Sulfurglas Hardener - Ver. 4

SDS No.: 040

Date of Preparation: September 22, 2015

Date of Last Revision: May 05, 2020

Page 05 of 08

Organic amine mixture	Not available	1,716 mg/kg (rat)	1,465 mg/kg (rabbit)
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**LC50 (Inhalation)**

Exposure may cause irritation to respiratory tract.

**LD50 (Oral)**

Swallowing may result in burns to the throat and mouth. Aspiration hazard high.

**LD50 (Dermal)**

Harmful absorption levels associated with prolonged skin exposure.

**Skin Corrosion/Irritation**

Human experience shows moderate or severe irritation. Skin Sensitization: repeated or prolonged exposure can irritate or burn the skin.

**Serious Eye Damage/Irritation**

May irritate or burn the eyes. Permanent damage including blindness may result. The vapour also irritates the eyes.

**STOT (Specific Target Organ Toxicity) - Single Exposure**

**Inhalation**

Causes severe nose and throat irritation.

**Skin Absorption**

May be harmful Symptoms may include redness, rash, swelling and itching.

**Ingestion**

If small amounts are swallowed may cause harmful effects on the liver.

**Aspiration Hazard**

May be drawn into the lungs (aspirated) if swallowed or vomited. May cause lung damage if aspirated based on existing animal tests and physical and chemical properties.

**STOT (Specific Target Organ Toxicity) - Repeated Exposure**

Following skin contact and/or if swallowed: harmful effects on the liver. Liver function tests may show abnormal results.

**Respiratory and/or Skin Sensitization**

Human experience shows severe asthma or asthma-like symptoms (respiratory sensitization) in rare cases following exposure at work. In sensitized people, exposure to a very small amount of product can cause symptoms including wheezing, difficult breathing, sneezing and runny or blocked nose. Can cause death. Symptoms can develop immediately following exposure or hours later. Repeated exposure will make the reaction worse. In sensitized people, contact with a very small amount of product can cause an allergic reaction. Symptoms include redness, rash, itching and swelling. This reaction can spread from the hands or arms to the face and body. Repeated exposure will make the reaction worse.

**Carcinogenicity**

Chemical Name	IARC	ACGIH®	NTP	OSHA
Organic amine mixture	Not Listed	Not designated	Not Listed	Not Listed

**Reproductive Toxicity**

**Development of Offspring**

May harm the unborn child.

**Sexual Function and Fertility**

May cause effects on sexual function and/or fertility.

**Effects on or via Lactation**

No information was located.

**Germ Cell Mutagenicity**

Causes mutagenicity in in vitro tests.

**Interactive Effects**

No information was located.

**Other Information**

Aspiration hazard

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Harmful to aquatic life, based on acute toxicity tests. Can cause sharp increase in pH value in aquatic environments.

#### Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Organic amine mixture	31.1 mg/L (Daphnia magna (water flea); 48-hour)	Not available		20 mg/L (Pseudokirchneriella subcapitata (algae); 72-hour; semi-static)

#### Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea
Organic amine mixture	Not available	Not available	1.9 mg/L (Daphnia magna (water flea); 21-day; semi-static)	Not available

### Persistence and Degradability

Does not degrade rapidly based on half-life measurements.

### Bioaccumulative Potential

Bioaccumulative potential is low. Bio-concentration factor (BCF): <100.

### Mobility in Soil

If released into the environment, this product can move rapidly through the soil.

### Other Adverse Effects

There is no information available.

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal Methods

Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction.

## SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	UN2259	triethylenetetramine	8	II
IMO (Marine)	UN2259	triethylenetetramine	8	II
IATA (Air)	UN2259	triethylenetetramine	8	II
Canadian TDG	UN2259	triethylenetetramine	8	II

**Environmental Hazards** Not applicable

**Special Precautions** Not applicable

### Transport in Bulk according to International Maritime Organization Instruments

Not applicable

**Emergency Response Guide No.** 153

Product Identifier: Sulfurglas Hardener - Ver. 4

SDS No.: 040

Date of Preparation: September 22, 2015

Date of Last Revision: May 05, 2020

Page 07 of 08

## SECTION 15. REGULATORY INFORMATION

### Safety, Health and Environmental Regulations

This section is not required by OSHA HCS 2012.

#### Canada

##### Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

##### CEPA - National Pollutant Release Inventory (NPRI)

Not specifically listed.

#### USA

##### Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

##### Additional USA Regulatory Lists

US Federal

HCS Classification Hazardous Substance

SARA Title III - Section 302:

SARA Title III - Section 311/312: Acute Health Hazard Chronic Health Hazard.

SARA Title III - Section 313: None required

State Regulations California Proposition 65: Not listed.

Pennsylvania Right To Know: Chemical Listed: Hazardous Substance. (Triethylenetetramine mixture).

(Tetraethylenepentamine mixture). (Aminoethylethanolamine)

## SECTION 16. OTHER INFORMATION

<b>NFPA Rating</b>	<b>Health - 3</b>	<b>Flammability - 1</b>	<b>Instability - 0</b>
	<b>Based on</b> Triethylenetetramine mixture		
<b>SDS Prepared By</b>	B.E.R		
<b>Phone No.</b>	(315) 782-3000		
<b>Date of Preparation</b>	September 22, 2015		
<b>Date of Last Revision</b>	May 05, 2020		
<b>Revision Indicators</b>	Revision 4 The following SDS content was changed on May 05, 2020: reviewed and approved		
<b>Key to Abbreviations</b>	ACGIH® = American Conference of Governmental Industrial Hygienists AIHA® = AIHA® Guideline Foundation IARC = International Agency for Research on Cancer NFPA = National Fire Protection Association OSHA = US Occupational Safety and Health Administration NTP = National Toxicology Program NIOSH = National Institute for Occupational Safety and Health		
<b>References</b>	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).		
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