



# SAFETY DATA SHEET

## SOLUS AP25

### 1. Product and Company Identification

**Material name** SOLUS AP25  
**Version #** 1.1  
**Revision date** 11/02/2014  
**Supersedes date** 26/11/2013  
**CAS #** Mixture  
**Product application** Internal boiler water treatment

#### Company/undertaking identification

GE Betz, Inc.  
 4636 Somerton Road  
 Treose, PA 19053  
 T 215 355 3300, F 215 953 5524

#### Emergency telephone

(800) 877 1940

### 2. Hazards Identification

#### Emergency overview

**DANGER -- CORROSIVE**  
 Corrosive to skin. Corrosive to the eyes. Mists/aerosols may cause irritation to upper respiratory tract. Product contains trace levels of ammonia which can accumulate in the container head space or impart an odor. Store in ventilated area. Corrosive to aluminum.

#### Potential health effects

**Eyes** Corrosive to eyes  
**Skin** Primary route of exposure. Corrosive to skin  
**Inhalation** Mists/aerosols may cause irritation to upper respiratory tract.  
**Ingestion** May cause gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea. Small amounts aspirated during ingestion or vomiting may cause lung injury, possibly leading to death.

#### Signs and symptoms

Causes severe irritation, burns or tissue ulceration with subsequent scarring.

#### Medical conditions aggravated by exposure

None known.

### 3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
Sodium hydroxide	1310-73-2	2.5 - 10
Non-hazardous components	CAS #	
Water	7732-18-5	
2-Propenoic acid, polymer with 2-hydroxy-3-(2-propenyloxy)- 1-propanesulfonic acid monosodium salt and a-sulfo-w-(2-propenyloxy)poly (oxy-1,2-ethanediyl) ammonium salt, sodium salt	903573-39-7	

## Composition comments

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

## 4. First Aid Measures

### First aid procedures

<b>Eye contact</b>	URGENT! Immediately flush eyes with water for 30 minutes while removing contact lenses. Keep eyelids apart. Get medical attention immediately.
<b>Skin contact</b>	URGENT ! Wash thoroughly with soap and water for at least 30 minutes. Take off contaminated clothing and wash before reuse. Get medical attention immediately.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Seek medical attention.
<b>Ingestion</b>	Do NOT induce vomiting! Do not feed anything by mouth to an unconscious or convulsive victim. Immediately contact a physician. If vomiting occurs naturally have victim lean forward to reduce risk of aspiration.

### Notes to physician

Aspiration into the lungs will result in chemical pneumonia and may be fatal.

## 5. Fire Fighting Measures

### Extinguishing media

**Suitable extinguishing media** Carbon dioxide, dry chemicals, foam, water spray (fog).

### Protection of firefighters

**Specific hazards arising from the chemical** Corrosive liquid.

**Protective equipment and precautions for firefighters** Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

### Fire fighting

Not available.

### equipment/instructions

### Hazardous combustion products

Oxides of carbon Oxides of nitrogen. Oxides of sulphur. Oxides of phosphorus

## 6. Accidental Release Measures

### Personal precautions

Corrosive to skin and eyes. Alkaline. Avoid contact with spilled material. See Section 8 of the MSDS for Personal Protective Equipment.

### Environmental precautions

Prevent from entering sewers or the immediate environment. Accidental release of large quantities into the aquatic environment may harm aquatic organisms. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

### Methods for containment

Stop leak if you can do so without risk. Dike the spilled material, where this is possible.

### Methods for cleaning up

Contain and recover by physical means. Clean with water. Wet area may be slippery. Spread sand/grit.

## 7. Handling and Storage

### Handling

Corrosive to skin or eyes. Alkaline. Do not mix with acidic material. Adequate ventilation required especially during initial opening.

### Storage

Store containers closed when not in use. Do not freeze. If frozen, thaw completely and mix thoroughly prior to use. Store in dry, cool, well ventilated area. Keep away from strong acids and oxidizers.

## 8. Exposure Controls / Personal Protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

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

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

### Engineering controls

Adequate ventilation to maintain air contaminants below exposure limits especially during initial opening. Bulk tanks should be vented externally.

### Personal protective equipment

**Eye / face protection** Splash proof chemical goggles. Face shield.

<b>Skin protection</b>	Gauntlet-type rubber, butyl or neoprene gloves. Chemical resistant apron. Wash off after each use. Replace as necessary.
<b>Respiratory protection</b>	If air-purifying respirator use is appropriate, use any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.

## 9. Physical & Chemical Properties

### Appearance

<b>Physical state</b>	Liquid
<b>Color</b>	Amber
<b>Odor</b>	Slight ammonia
<b>Odor threshold</b>	Not available.
<b>pH (concentrated product)</b>	> 13
<b>pH in aqueous solution</b>	> 13 (5% SOL.)
<b>Vapor pressure</b>	18 mm Hg
<b>Vapor pressure temp.</b>	70 °F (21 °C)
<b>Vapor density</b>	< 1 (Air = 1)
<b>Boiling point</b>	220 °F (104 °C)
<b>Melting point/Freezing point</b>	14 °F (-10 °C)
<b>Solubility (water)</b>	100 %
<b>Specific gravity (70°F, 21°C)</b>	1.164
<b>Flash point</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Evaporation rate</b>	< 1 (Ether = 1)
<b>Viscosity</b>	28 cps
<b>Viscosity temperature</b>	70 °F (21 °C)
<b>Percent volatile</b>	0 (Estimated)
<b>Pour point</b>	19 °F (-7 °C)

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	Protect from freezing.
<b>Incompatible materials</b>	Avoid contact with strong acids and oxidisers.
<b>Hazardous decomposition products</b>	Oxides of carbon, nitrogen, phosphorus, and sulphur evolved in fire.

## 11. Toxicological Information

### Toxicological data

Product	Species	Test Results
SOLUS AP25 (CAS Mixture)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula (Category 5))
<i>Inhalation</i>		
LC50	Rat	> 5 mg/l, 4 Hour, (Calculated according to GHS additivity formula (Category 4))
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula (Category 5))

Components	Species	Test Results
Sodium hydroxide (CAS 1310-73-2)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	1350 mg/kg
<i>Oral</i>		
LD50	Rabbit	500 mg/kg

## 12. Ecological Information

### Ecotoxicity

Product	Species	Test Results
SOLUS AP25 (CAS Mixture)		
	LC50	Fathead Minnow
		> 5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
	NOEL	Fathead Minnow
		5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
Crustacea	LC50	Daphnia magna
		2836 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna
		625 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
Other	LC50	Rainbow Trout
		> 5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout
		5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)

## 13. Disposal Considerations

**Disposal instructions** According to Hazardous Waste Regulations. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.

**Contaminated packaging** According to Hazardous Waste Regulations. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.

## 14. Transport Information

### DOT

#### Basic shipping requirements:

**UN number** UN1824  
**Proper shipping name** SODIUM HYDROXIDE SOLUTION, RQ  
**Hazard class** 8  
**Packing group** II

#### Additional information:

**ERG code** 154  
Some containers may be DOT exempt, please check BOL for exact container classification.

### TDG

**UN number** UN1824  
**UN proper shipping name** SODIUM HYDROXIDE SOLUTION  
**Hazard class** 8  
**Packing group** II  
**ERG code** 154

### IATA

**UN number** UN1824  
**UN proper shipping name** SODIUM HYDROXIDE SOLUTION  
**Transport hazard class(es)** 8  
**Packing group** II

Some containers may not be approved under IATA, please check BOL for exact container classification.

### IMDG

**UN number** UN1824

UN proper shipping name SODIUM HYDROXIDE SOLUTION, RQ  
 Transport hazard class(es) 8  
 Packing group II

DOT



IATA; IMDG; TDG



## 15. Regulatory Information

### US federal regulations

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

None listed.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

### CERCLA (Superfund) reportable quantity

Sodium hydroxide: 1000 lbs

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories**  
 Immediate Hazard - Yes  
 Delayed Hazard - Yes  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

**SARA 302 Extremely hazardous substance** No

**SARA 311/312 Hazardous chemical** Yes

### Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

### State regulations

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

1,4-DIOXANE (CAS 123-91-1) Listed: January 1, 1988 Carcinogenic.

**US - California Proposition 65 - CRT: Listed date/Developmental toxin**

No ingredient listed.

**US - California Proposition 65 - CRT: Listed date/Female reproductive toxin**

No ingredient listed.

**US - California Proposition 65 - CRT: Listed date/Male reproductive toxin**

No ingredient listed.

**US - Massachusetts RTK - Substance List**

Sodium hydroxide (CAS 1310-73-2)

**US - New Jersey RTK - Substances: Listed substance**

Sodium hydroxide (CAS 1310-73-2) Listed.

**US - Pennsylvania RTK - Hazardous Substances**

Sodium hydroxide (CAS 1310-73-2) Listed.

**US - Rhode Island RTK**

Sodium hydroxide (CAS 1310-73-2)

**16. Other Information**

**List of abbreviations**

CAS: Chemical Abstract Service Registration Number  
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.  
ACGIH: American Conference of Governmental Industrial Hygienists  
NOEL: No Observed Effect Level  
STEL: Short Term Exposure Limit  
LC50: Lethal Concentration, 50%  
TWA: Time Weighted Average  
BOD: Biochemical Oxygen Demand  
COD: Chemical Oxygen Demand  
TOC: Total Organic Carbon  
IATA: International Air Transport Association  
IMDG: International Maritime Dangerous Goods Code  
LD50: Lethal Dose, 50%  
NFPA: National Fire Protection Association

**HMIS® ratings**

Health: 3\*  
Flammability: 0  
Physical hazard: 1

**NFPA ratings**

Health: 3  
Flammability: 0  
Instability: 1

**Prepared by**

This MSDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).