



SAFETY DATA SHEET

SOLUS AP23

1. Product and Company Identification

Material name	SOLUS AP23
Version #	5.1
Revision date	11/02/2014
Supersedes date	20/12/2013
CAS #	Mixture
Product application	Internal boiler water treatment

Company/undertaking identification

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

Emergency telephone

(800) 877 1940

2. Hazards Identification

Emergency overview CAUTION

May cause slight irritation to the eyes. Mists/aerosols may cause irritation to upper respiratory tract. Non-hazardous to skin.

Potential health effects

Eyes	May cause slight irritation to the eyes.
Skin	Primary route of exposure Non-hazardous to skin.
Inhalation	Mists/aerosols may cause irritation to upper respiratory tract.
Ingestion	May cause slight gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

Target organs No evidence of potential chronic effects.

Signs and symptoms Inhalation may cause irritation of respiratory tract. May cause redness or itching of skin.

Medical conditions aggravated by exposure None known.

3. Composition / Information on Ingredients

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

Eye contact	Rinse immediately with plenty of water for at least 15 minutes. If easy to do remove contact lenses. Hold eyelids apart. Get medical attention immediately.
Skin contact	Wash thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation develops and persists. Wash clothing separately before reuse.
Inhalation	Remove to fresh air. Get medical attention if symptoms occur.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do NOT induce vomiting! Immediately contact a physician. If vomiting occurs naturally have victim lean forward to reduce risk of aspiration.

Notes to physician No other instruction than the ones already informed.

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing media Foam. Dry chemical powder. Carbon dioxide (CO₂). Water.

Protection of firefighters

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 equipment/instructions Not available.

Hazardous combustion products Oxides of carbon Oxides of nitrogen. Oxides of sulphur. Oxides of phosphorus

6. Accidental Release Measures

Personal precautions Avoid inhalation of vapors and spray mists. Please refer also to section no. 8 'Exposure controls' for further information.

Methods for containment Stop the flow of material, if this is without risk. Absorb spillage to prevent material damage. Scoop up used absorbent into drums or other appropriate container. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product.

Methods for cleaning up Contain and recover by physical means. Absorb onto inert material and dispose of according to Hazardous Waste Regulations. Clean with water. Spread sand/grit.

7. Handling and Storage

Handling Normal chemical handling. Avoid heat, sparks, open flames and other ignition sources.

Storage Store in tightly closed original container in a dry, cool and well-ventilated place. Store away from strong oxidizers. Keep away from all sources of ignition.

8. Exposure Controls / Personal Protection

Engineering controls Adequate ventilation to maintain air contaminants below exposure limits.

Personal protective equipment

Eye / face protection Splash proof chemical goggles.

Skin protection Rubber, butyl, viton or neoprene gloves. Wash off after each use. Replace as necessary.

Respiratory protection 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

Physical state Liquid

Color Amber

Odor Slight ammonia

pH (concentrated product) 12.2

pH in aqueous solution 11 (5% SOL.)

Vapor pressure 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1 (Air = 1)

Boiling point 220 °F (104 °C)

Solubility (water) 100 %

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Specific gravity (70°F, 21°C)	1.078
Evaporation rate	< 1 (Ether = 1)
Viscosity temperature	70 °F (21 °C)
Percent volatile	0 (Estimated)
Pour point	33 °F (1 °C)

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources.
Incompatible materials	Strong oxidizing substances.
Hazardous decomposition products	Oxides of carbon, nitrogen, phosphorus, and sulphur evolved in fire.

11. Toxicological Information

Acute effects	This product contains no known ingredients that exhibit hazards that are required by the U.S. OSHA HAZARD COMMUNICATION STANDARD or WHMIS to be listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.
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12. Ecological Information

Ecotoxicity

Product		Species	Test Results
SOLUS AP23 (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	3352 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	2500 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	Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.
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14. Transport Information

DOT

Not regulated as dangerous goods.
Some containers may be DOT exempt, please check BOL for exact container classification.

TDG

Not regulated as a dangerous good.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

None listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical No

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
Not regulated.

US - Pennsylvania RTK - Hazardous Substances
Not regulated.

US - Rhode Island RTK
Not regulated.

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: 1
Flammability: 1
Physical hazard: 0
Personal protection: B

NFPA ratings

Health: 1
Flammability: 1
Instability: 0
Special hazards: NONE

Prepared by

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