SECTION 1: Product and company identification

Product name: Boiler Treat “S”
Use of the substance/mixture: Water treatment
Product code: 1958
Company: Total Solutions
P.O. Box 240014
Milwaukee, WI 53224 - USA
T: (414) 354-6417

Emergency number: Chemtec: (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)
Met. Corr. 1 H290
Skin Corr. 1A H314
Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US)
Hazard pictogram: GHS05

Signal word (GHS-US): Danger
Hazard statements (GHS-US): May be corrosive to metals
Causes severe skin burns and eye damage
Precautionary statements (GHS-US): Keep only in original container
Do not breathe mist, spray
Wash thoroughly after handling
Wear eye protection, protective clothing, protective gloves
If swallowed: rinse mouth. Do NOT induce vomiting
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
If inhaled: Remove person to fresh air and keep comfortable for breathing
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a doctor, a POISON CENTER
Wash contaminated clothing before reuse
Absorb spillage to prevent material damage
Store locked up
Store in corrosive resistant container with a resistant inner liner
Dispose of contents/container to comply with local/regional/national/international regulations.

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable
Full text of H-phrases: see section 16

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
</table>
| potassium hydroxide, 45%=<conc<50%, aqueous solutions | (CAS No) 1310-58-3    | 1-5 | Met. Corr. 1, H290
Acute Tox. 3 (Oral), H301
Skin Corr. 1A, H314 |
| tetrapotassium pyrophosphate, anhydrous           | (CAS No) 7320-34-5    | 1-5 | Skin Irrit. 2, H315
Eye Irrit. 2A, H319 |
SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after skin contact: Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact: 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.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries: Causes severe skin burns and eye damage.

Symptoms/injuries after inhalation: May cause respiratory irritation.

Symptoms/injuries after skin contact: Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact: Causes serious eye damage. Corrosion of the eye tissue. Permanent eye damage.


4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: All extinguishing media allowed.

5.2. Special hazards arising from the substance or mixture

Reactivity: Upon combustion: CO and CO2 are formed.

5.3. Advice for firefighters

Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. Take account of environmentally hazardous firefighting water.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Isolate from fire, if possible, without unnecessary risk.

6.1.1. For non-emergency personnel


Emergency procedures: Evacuate unnecessary personnel. Avoid contact with skin, eyes and clothing. Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Stop leak if safe to do so. Stop release. Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent soil and water pollution.

6.3. Methods and material for containment and cleaning up

For containment: Contain released substance, pump into suitable containers.

Methods for cleaning up: This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

No additional information available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Comply with the legal requirements. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Do not get in eyes, on skin, or on clothing.

Hygiene measures: Wash thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Comply with applicable regulations. Add ALLWAYS product to water for dilution/mixture. Never add water to this product.

Storage conditions: Keep container closed when not in use.
Incompatible products: acids.
Prohibitions on mixed storage: KEEP SUBSTANCE AWAY FROM: (strong) acids.
Storage area: Meet the legal requirements. Store in a dry area. Store in a cool area.
Special rules on packaging: meet the legal requirements. Keep only in original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| potassium hydroxide, 45%=<conc<50%, aqueous solutions (1310-58-3) |
|-----------------------|------------------|-----------------
| ACGIH                | ACGIH Ceiling (mg/m³) | 2 mg/m³ |

8.2. Exposure controls

Personal protective equipment: Use appropriate personal protective equipment when risk assessment indicates this is necessary. Gloves. Safety glasses. Protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Appearance: clear. brown. Liquid.
Odor: characteristic
Odor threshold: No data available
pH: 13 - 14
Melting point: No data available
Freezing point: No data available
Boiling point: No data available
Flash point: > 200 °F Closed Cup
Relative evaporation rate (butyl acetate=1): No data available
Flammability (solid, gas): No data available
Explosion limits: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Vapor pressure: No data available
Relative density: No data available
Relative vapor density at 20 °C: No data available
Specific gravity / density: 1.07 g/ml
Solubility: Soluble in water.
Log Pow: No data available
Log Kow: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
VOC content: ND

SECTION 10: Stability and reactivity

10.1. Reactivity

Upon combustion: CO and CO2 are formed.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Refer to section 10.1 on Reactivity.
10.4. Conditions to avoid
No additional information available

10.5. Incompatible materials
acids.

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Potassium hydroxide, 45%=&lt;conc&lt;50%, aqueous solutions (1310-58-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>ATE CLP (oral)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tetrapotassium pyrophosphate, anhydrous (7320-34-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 dermal rabbit</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Not classified.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact : Causes serious eye damage. Corrosion of the eye tissue. Permanent eye damage.


SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Potassium hydroxide, 45%=&lt;conc&lt;50%, aqueous solutions (1310-58-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>LC50 other aquatic organisms 1</td>
</tr>
<tr>
<td>LC50 fish 2</td>
</tr>
<tr>
<td>Threshold limit other aquatic organisms 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tetrapotassium pyrophosphate, anhydrous (7320-34-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Potassium hydroxide, 45%=&lt;conc&lt;50%, aqueous solutions (1310-58-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
</tr>
<tr>
<td>ThOD</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tetrapotassium pyrophosphate, anhydrous (7320-34-5)</th>
</tr>
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<tbody>
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</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
</tr>
</tbody>
</table>
**SECTION 13: Disposal considerations**

13.1. Waste treatment methods

Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.

**SECTION 14: Transport information**

Department of Transportation (DOT)

Transport document description: UN3266 Corrosive liquid, basic, inorganic, n.o.s. (Potassium Hydroxide), 8, II

UN-No. (DOT): UN3266

Proper Shipping Name (DOT): Corrosive liquid, basic, inorganic, n.o.s.

Transport hazard class(es) (DOT): 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT): 8 - Corrosive

Packing group (DOT): II - Medium Danger

DOT Packaging Non Bulk (49 CFR 173.xxx): 202

DOT Packaging Bulk (49 CFR 173.xxx): 242

DOT Symbols: G - Identifies PSN requiring a technical name


DOT Packaging Exceptions (49 CFR 173.xxx): 154

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27): 1 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75): 30 L

DOT Vessel Stowage Location: B

DOT Vessel Stowage Other: 40 - Stow “clear of living quarters”, 52 - Stow “separated from” acids

Additional information

Other information: No supplementary information available.

**ADR**

No additional information available

**Transport by sea**

No additional information available

**Air transport**

No additional information available

**SECTION 15: Regulatory information**

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
Boiler Treat “S”
Safety Data Sheet

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>potassium hydroxide, 45%&lt;=conc&lt;50%, aqueous solutions (1310-58-3)</td>
<td></td>
</tr>
</tbody>
</table>

Not listed on SARA Section 313 (Specific toxic chemical listings)

<table>
<thead>
<tr>
<th>RQ (Reportable quantity, section 304 of EPA’s List of Lists)</th>
<th>1000 lb</th>
</tr>
</thead>
</table>

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity

SECTION 16: Other information

Training advice: Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-phrases</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 3 (Oral)</td>
<td>Acute toxicity (oral) Category 3</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Met. Corr. 1</td>
<td>Corrosive to metals Category 1</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td>Skin corrosion/irritation Category 1A</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>H290</td>
<td>May be corrosive to metals</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
</tbody>
</table>

NFPA health hazard: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard: 0 - Materials that will not burn.

NFPA reactivity: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

Prepared by: Technical Department

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. No warranty is expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Our company assumes no responsibility for personal injury or property damage to the vendee, users or third parties caused by the material. Such vendees or users assume all risks associated with the use of this material.