# Material Safety Data Sheet

# PSC-AGA-XL-1

## 1. Product and Company Identification

| | |
|---|---|
| **Material name** | **PSC-AGA-XL-1** |
| **Patent Number** | Not available |
| **Revision date** | April-08-2011 |
| **Version No.** | 3 |
| **CAS #** | Mixture |
| **Product use** | Crosslinker |
| **Manufacturer information** | Clearwater™ International L.L.C.<br>100 Leetsdale Industrial Drive<br>Leetsdale, PA 15056 US<br>CHEMTREC 1-800-424-9300/703-527-3887 |
| **Emergency** | CHEMTREC 1-800-424-9300/703-527-3887 |
| **Supplier information** | Producers Service Corp.<br>109 South Graham St.<br>Zanesville, OH 43701 US |
| **Supplier emergency telephone number(s)** | 24hr customer Service 740-454-6253 |

## 2. Hazards Identification

| | |
|---|---|
| **Emergency overview** | WARNING<br><br>Corrosive. Causes skin and eye burns. Harmful by inhalation, in contact with skin and if swallowed. This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Do not get this material in contact with skin. Do not get this material in contact with eyes. |
| **OSHA regulatory status** | This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). |
| **Potential environmental effects** | Components of this product are hazardous to aquatic life. Ecological injuries are not known or expected under normal use. |

## 3. Composition / Information on Ingredients

| Components | CAS # | Percent |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | 30 - 60 |
| Hydrochloric acid | 7647-01-0 | 3 - 7 |

## 4. First Aid Measures

**First aid procedures**

| | |
|---|---|
| **Eye contact** | Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Rinse with water. |
| **Skin contact** | Remove contaminated clothing. Get medical attention. Wash skin with soap and plenty of water for 15-20 minutes. |
| **Inhalation** | Remove to fresh air. If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration or give oxygen by trained personnel. |
| **Ingestion** | Never give anything by mouth to an unconscious person. If swallowed, seek medical advice immediately and show this container or label. Give several glasses of water to dilute contents of stomach and call a physician. |
| **General advice** | If you feel unwell, seek medical advice (show the label where possible). |

## 5. Fire Fighting Measures

**Extinguishing media**

| | |
|---|---|
| **Suitable extinguishing media** | Dry chemical, CO2, water spray or regular foam. |
| **Unsuitable extinguishing media** | Do not use a solid water stream as it may scatter and spread fire. |

**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. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Move containers from fire area if you can do it without risk. Do not scatter spilled material with high pressure water streams. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out. |

## 6. Accidental Release Measures

| | |
|---|---|
| **Personal precautions** | Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unnecessary personnel away. Stay upwind. Keep out of low areas. |
| **Environmental precautions** | Prevent further leakage or spillage if safe to do so. Do not contaminate water. |
| **Methods for containment** | Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. |

**Methods for cleaning up**

Should not be released into the environment.

Large Spills: Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. After removal flush contaminated area thoroughly with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly.

Never return spills in original containers for re-use.

## 7. Handling and Storage

**Handling**

Do not handle or store near an open flame, heat or other sources of ignition. Use only with adequate ventilation. Handle and open container with care. Wash thoroughly after handling.

**Storage**

Keep away from heat and sources of ignition (spark or flame). Store in a closed container away from incompatible materials. Use care in handling/storage.

## 8. Exposure Controls / Personal Protection

**Exposure limits**

**ACGIH**

| Components | CAS # | TWA | STEL | Ceiling |
|---|---|---|---|---|
| Hydrochloric acid | 7647-01-0 | Not established | Not established | 2 ppm |

**OSHA**

| Components | CAS # | TWA | STEL | Ceiling |
|---|---|---|---|---|
| Hydrochloric acid | 7647-01-0 | Not established | Not established | 5 ppm |

**Engineering controls**

Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

**Eye / face protection**

Safety glasses with side-shields. If splashes are likely to occur, wear:

**Skin protection**

apron, boots, Closed-toe shoes recommended.

**General hygeine considerations**

When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical & Chemical Properties

**Appearance** Liquid.

**Color** Reddish brown

**Odor** Acid odor

**Odor threshold** Not available

**Physical state** Liquid.

**Form** Liquid.

**pH** 2

**Melting point** 26.6 °F (-2.86 °C) estimated

**Freezing point** Not available

| | |
|---|---|
| **Boiling point** | 446 °F (230 °C) |
| **Flash point** | Not available |
| **Evaporation rate** | Not available |
| **Flammability** | Not available. |
| **Flammability limits in air, upper, % by volume** | Not available |
| **Flammability limits in air, lower, % by volume** | Not available |
| **Vapor pressure** | Negligible |
| **Vapor density** | Not available |
| **Specific gravity** | 1.432 @17.5 C |
| **Relative density** | 1.4319 g/cm3 estimated |
| **Solubility (water)** | 100 % complete |
| **Partition coefficient (n-octanol/water)** | Not available |
| **Auto-ignition temperature** | Not available |
| **Decomposition temperature** | Not available |

## 10. Chemical Stability & Reactivity Information

| | |
|---|---|
| **Chemical stability** | Stable at normal conditions. |
| **Conditions to avoid** | Heat, flames and sparks. |
| **Incompatible materials** | Material is acidic and corrodes all common metals except titanium Avoid contact with alkalis and alkali metals |
| **Hazardous decomposition products** | May release chlorine gas at elevated temperatures |

## 11. Toxicological Information

**Component analysis - LD50**

**Toxicology Data - Selected LD50s and LC50s**

| | | |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | Oral LD50 Rat: 450 mg/kg |
| Hydrochloric acid | 7647-01-0 | Inhalation LC50 Rat: 3124 ppm/1H; Oral LD50 Rat: 700 mg/kg; Dermal LD50 Rabbit: >5010 mg/kg |

| | |
|---|---|
| **Sensitization** | Not expected to be hazardous by OSHA criteria. |
| **Chronic effects** | Not expected to be hazardous by OSHA criteria. |
| **Carcinogenicity** | Not expected to be hazardous by OSHA criteria. |

**ACGIH - Threshold Limit Values - Carcinogens**

| | | |
|---|---|---|
| Hydrochloric acid | 7647-01-0 | A4 - Not Classifiable as a Human Carcinogen |

| | |
|---|---|
| **Neurological effects** | Not expected to be hazardous by OSHA criteria. |
| **Further information** | This product has no known adverse effect on human health. |

## 12. Ecological Information

**Ecotoxicity** Components of this product are hazardous to aquatic life. This product has no known eco-toxicological effects.

**Ecotoxicity - Freshwater Fish Species Data**

| | | |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | 24 Hr LC50 Morone saxatilis: 6 mg/L [static] (fingerling); 96 Hr LC50 Gambusia affinis: 75.6 mg/L [static] |
| Hydrochloric acid | 7647-01-0 | 48 Hr LC50 Lepomis macrochirus: 3.6 mg/L; 96 Hr LC50 Gambusia affinis: 282 mg/L |

**Ecotoxicity - Water Flea Data**

| | | |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | 48 Hr EC50 Daphnia magna: 27.9 mg/L |

**Environmental effects** Harmful to aquatic life.

**Ecotoxicity - Freshwater Fish Species Data**

| | | |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | 24 Hr LC50 Morone saxatilis: 6 mg/L [static] (fingerling); 96 Hr LC50 Gambusia affinis: 75.6 mg/L [static] |
| Hydrochloric acid | 7647-01-0 | 48 Hr LC50 Lepomis macrochirus: 3.6 mg/L; 96 Hr LC50 Gambusia affinis: 282 mg/L |

**Ecotoxicity - Water Flea Data**

| | | |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | 48 Hr EC50 Daphnia magna: 27.9 mg/L |

## 13. Disposal Considerations

**Waste codes** D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]

**Disposal instructions** Dispose of this material and its container at hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies. Incinerate the material under controlled conditions in an approved incinerator. Dispose in accordance with all applicable regulations.

## 14. Transport Information

**Department of Transportation (DOT) Requirements**

**Basic shipping requirements:**

| | |
|---|---|
| **Proper shipping name** | Ferric chloride, solution |
| **Hazard class** | 8 |
| **UN number** | UN2582 |
| **Packing group** | III |
| **Additional information:** | |
| **Special provisions** | B15, IB3, T4, TP1 |
| **Packaging exceptions** | 154 |
| **Packaging non bulk** | 203 |
| **Packaging bulk** | 241 |
| **Reportable quantity** | 1000 |
| **ERG number** | 154 |

**Department of Transportation (DOT) Requirements**

**Bulk**

**Basic shipping requirements:**

| | |
|---|---|
| **Proper shipping name** | Ferric chloride, solution |
| **Hazard class** | 8 |
| **UN number** | UN2582 |
| **Packing group** | III |
| **Additional information:** | |
| **Special provisions** | B15, IB3, T4, TP1 |
| **Packaging exceptions** | 154 |
| **Packaging non bulk** | 203 |
| **Packaging bulk** | 241 |
| **Reportable quantity** | 1000 |
| **ERG number** | 154 |

**Canadian Transportation of Dangerous Goods (TDG) Requirements**

**Basic shipping requirements:**

| | |
|---|---|
| **Proper shipping name** | FERRIC CHLORIDE SOLUTION |
| **Hazard class** | 8 |
| **UN number** | UN2582 |
| **Packing group** | III |
| **Additional information:** | |
| **ERG number** | 154 |

**IMDG**

**Basic shipping requirements:**

| | |
|---|---|
| **Proper shipping name** | FERRIC CHLORIDE SOLUTION |
| **Hazard class** | 8 |
| **UN number** | 2582 |
| **Packing group** | III |

**IATA**

**Basic shipping requirements:**

| | |
|---|---|
| **Proper shipping name** | Ferric chloride solution |
| **Hazard class** | 8 |
| **UN number** | 2582 |
| **Packing group** | III |

## 15. Regulatory Information

**Labelling**

**Contains** FERRIC CHLORIDE, Hydrochloric acid

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**

| | | |
|---|---|---|
| Hydrochloric acid | 7647-01-0 | 1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size) |

**U.S. - FDA - Food Additives Generally Recognized as Safe (GRAS)**

| | | |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | 21 CFR 184.1297 |
| Hydrochloric acid | 7647-01-0 | 21 CFR 182.1057 |

**Occupational Safety and Health Administration (OSHA)**

**29 CFR 1910.1200 hazardous chemical** Yes

**CERCLA (Superfund) reportable quantity**

FERRIC CHLORIDE: 1000.0000
Hydrogen chloride: 5000.0000

**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

**Section 302 extremely hazardous substance** No

**Section 311 hazardous chemical** Yes

**Inventory status**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of New and Existing Chemicals (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | No |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| 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)

**International regulations**

**Canada - WHMIS - Ingredient Disclosure List**

| | | |
|---|---|---|
| Hydrochloric acid | 7647-01-0 | 1 % |

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**U.S. - Massachusetts - Right To Know List**

| | | |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | Present |
| Hydrochloric acid | 7647-01-0 | Extraordinarily hazardous |

**U.S. - Minnesota - Hazardous Substance List**

| | | |
|---|---|---|
| Hydrochloric acid | 7647-01-0 | Present |

**U.S. - New Jersey - Right to Know Hazardous Substance List**

| | | |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | sn 1034 |
| Hydrochloric acid | 7647-01-0 | sn 1012; sn 2909 (gas only) |

**U.S. - Pennsylvania - RTK (Right to Know) List**

| | | |
|---|---|---|
| FERRIC CHLORIDE | 7705-08-0 | Environmental hazard |
| Hydrochloric acid | 7647-01-0 | Environmental hazard |

**U.S. - Rhode Island - Hazardous Substance List**

| | | |
|---|---|---|
| Hydrochloric acid | 7647-01-0 | Toxic; Flammable |

**U.S. - Texas - Effects Screening Levels - Long Term**

| | | |
|---|---|---|
| Hydrochloric acid | 7647-01-0 | 0.1 µg/m3 ESL (has disaster potential, under review) |

**U.S. - Texas - Effects Screening Levels - Short Term**

| | | |
|---|---|---|
| Hydrochloric acid | 7647-01-0 | 50 ppb ESL (has disaster potential, under review); 75 µg/m3 ESL (has disaster potential, under review) |

## 16. Other Information

**HMIS® ratings**
Health: 3
Flammability: 0
Physical hazard: 1
Personal protection: G

**NFPA ratings**
Health: 3
Flammability: 0
Instability: 1

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**Disclaimer**
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**Issue date** April-08-2011

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|---|---|
| **MSDS sections updated** | Product and Company Identification: Product and Company Identification<br>Hazards Identification: Emergency overview<br>Hazards Identification: Hazard statements<br>Handling and Storage: Storage<br>Exposure Controls / Personal Protection: Eye protection<br>Exposure Controls / Personal Protection: Skin and body protection<br>Exposure Controls / Personal Protection: General<br>Regulatory Information: United States<br>Other Information: Disclaimer<br>Other Information: MSDS footer disclaimer |