1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name  BIO-CHLOR PLUS

Other means of identification
Product Code  038
UN/ID No.  NA1760
Synonyms  None

Recommended use of the chemical and restrictions on use
Recommended Use  Liquid Non-Phosphate CIP Cleaner.
Uses advised against  No information available

Manufacturer Address
Anderson Chemical Company, 325 South Davis Avenue, Litchfield, MN 55355 (320-693-2477)

Emergency telephone number
Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Skin corrosion/irritation</th>
<th>Category 1  Sub-category A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Corrosive to metals</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

Label elements

Emergency Overview

Danger

Hazard statements
Causes severe skin burns and eye damage
May be corrosive to metals

Appearance  No information available  Physical state  liquid  Odor  Slight chlorine

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container
Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see Section 4 on this label)
IF IN EYES: 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
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Absorb spillage to prevent material damage

Precautionary Statements - Storage
Store locked up
Store in a corrosive resistant container.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other Information
• Very toxic to aquatic life with long lasting effects
• Very toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>12</td>
<td>Trade Secret</td>
</tr>
<tr>
<td>Sodium hypochlorite</td>
<td>7681-52-9</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice
Immediate medical attention is required.

Eye contact
Flush immediately with water for 15 minutes. Lift upper and lower eyelids for complete rinsing. Get immediate medical attention.

Skin Contact
Flush with water for 15 minutes. If irritation persists after rinsing, get medical attention. Remove contaminated clothing and wash before reuse.

Inhalation
Remove victim from immediate source of exposure to fresh air. If breathing is difficult, administer oxygen if available. If victim is not breathing, administer CPR. If individual experiences nausea, headache, or dizziness, get immediate medical attention.

Ingestion
Rinse mouth with water. Give water to dilute. Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to a semi-comatose, comatose, convulsing or unconscious person.

Self-protection of the first aider
Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8.

Most important symptoms and effects, both acute and delayed
Symptoms

Corrosive. Causes irritation (possibly severe), burns to the eyes. May cause permanent eye damage. Causes irritation (possibly severe), burns to the skin. Causes irritation (possibly severe), burns, pulmonary edema to the respiratory tract. Causes irritation (possibly severe), burns, nausea, vomiting to the gastrointestinal tract. The severity of effects depend on concentration and how soon after exposure the area is washed.

Indication of any immediate medical attention and special treatment needed

Note to physicians

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical

If the stock solution container breaks, the solution should be handled with care as it is corrosive. Direct contact with water can cause a violent exothermic reaction. Highly exothermic reactions with organic or oxidizable materials may cause fires in adjacent, heat sensitive material.

Hazardous combustion products

Toxic fumes of sodium oxide, HOCL, chlorine, HCl, NaCl, sodium chlorate and oxygen.

Explosion data

Sensitivity to Mechanical Impact

None.

Sensitivity to Static Discharge

None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Use water spray to cool fire exposed containers. Move containers from fire area if you can do it without risk.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Evacuate nonessential personnel. Ventilate area. Wear appropriate personal protection equipment.

Environmental precautions

See Section 12 for additional ecological information.

Methods for containment

Completely contain spilled material with dikes or sand bags, etc.

Methods for cleaning up

Recover as much material as possible into containers for disposal or reuse. Remaining material may be diluted with water and neutralized. Flush spill area with water. Neutralization products, both solid and liquid, must be recovered for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Do not get in eyes, on skin, or clothing. Wash thoroughly after handling. Wear appropriate protective clothing/equipment. Do not breathe dust. Use with adequate ventilation. Do not ingest.

Conditions for safe storage, including any incompatibilities
Storage Conditions

Keep containers tightly closed and properly labeled. Containers that have been emptied will retain product residue and should be handled as if they were full. Store in a cool, dry, well-ventilated place away from incompatible materials. Wash hands before eating, drinking, using tobacco, applying make-up or using the toilet. Do not store, use, and/or consume foods, beverages, tobacco in areas where this product is stored. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas can be generated.

Incompatible materials

Acids, ammonia, ether, halogenated compounds, oxidizing agents, reducing agents, oxidizable or combustible materials such as wood, cloth or organic materials, prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys. Avoid contact with heavy metal such as iron, magnesium, aluminum, manganese, chromium, nickel and their alloys. Avoid contact with leather, wool, organic nitro compounds.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide 1310-73-2</td>
<td>Ceiling: 2 mg/m³</td>
<td>TWA: 2 mg/m³ (vacated) Ceiling: 2 mg/m³</td>
<td>IDLH: 10 mg/m³ Ceiling: 2 mg/m³</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear protective splash proof safety goggles. Additional full face protection is recommended if splashing is a possibility.

Skin and body protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations

Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Slight chlorine</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>12.3</td>
<td>1% Solution</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Will react with some metals forming flammable hydrogen gas. Will react with acids to produce chlorine gas.

Incompatible materials
Acids, ammonia, ether, halogenated compounds, oxidizing agents, reducing agents, oxidizable or combustible materials such as wood, cloth or organic materials, prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys. Avoid contact with heavy metal such as iron, magnesium, aluminum, manganese, chromium, nickel and their alloys. Avoid contact with leather, wool, organic nitro compounds.

Hazardous Decomposition Products
Toxic fumes of sodium oxide, HOCL, chlorine, HCl, NaCl, sodium chlorate and oxygen.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information
No data available

Inhalation
No data available.

Eye contact
No data available.

Skin Contact
No data available.

Ingestion
No data available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide 1310-73-2</td>
<td>-</td>
<td>= 1350 mg/kg (Rabbit)</td>
<td>-</td>
</tr>
</tbody>
</table>
Sodium hypochlorite 7681-52-9

Information on toxicological effects

Symptoms
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity
No information available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hypochlorite</td>
<td>-</td>
<td>Group 3</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity
No information available.

STOT - single exposure
No information available.

STOT - repeated exposure
No information available.

Aspiration hazard
No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document.

ATEmix (dermal) 10883 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects

3% of the mixture consists of components(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>-</td>
<td>45.4: 96 h Oncorhynchus mykiss mg/L LC50 static</td>
<td>-</td>
</tr>
<tr>
<td>Sodium hypochlorite</td>
<td>0.095: 24 h Skeletonema costatum mg/L EC50</td>
<td>0.06 - 0.11: 96 h Pimephales promelas mg/L LC50 flow-through 4.5 - 7.6; 96 h Pimephales promelas mg/L LC50 static 0.4 - 0.8; 96 h Lepomis macrochirus mg/L LC50 static 0.28 - 1; 96 h Lepomis macrochirus mg/L LC50 flow-through 0.05 - 0.771; 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.03 - 0.19; 96 h Oncorhynchus mykiss mg/L LC50 semi-static 0.18 - 0.22; 96 h Oncorhynchus mykiss mg/L LC50 static</td>
<td>2.1: 96 h Daphnia magna mg/L EC50 0.033 - 0.044: 48 h Daphnia magna mg/L EC50 Static</td>
</tr>
</tbody>
</table>

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Disposal of wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Do not reuse container.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>Toxic</td>
</tr>
<tr>
<td>1310-73-2</td>
<td>Corrosive</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

Regulated

UN/ID No. NA1760

Proper shipping name Compounds, Cleaning Liquid

Hazardous ingredients (Sodium Hydroxide/Sodium Hypochlorite)

Hazard Class 8

Packing Group II

15. REGULATORY INFORMATION

International Inventories

TSCA Complies

DSL/NDSL Complies

EINECS/ELINCS Does not comply

ENCS Does not comply

IECSC Complies

KECL Complies

PICCS Complies

AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

- Acute health hazard Yes
- Chronic Health Hazard No
- Fire hazard No
- Sudden release of pressure hazard No
- Reactive Hazard No
CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>1000 lb</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>1310-73-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium hypochlorite</td>
<td>100 lb</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>7681-52-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>1000 lb</td>
<td>-</td>
<td>RQ 1000 lb final RQ</td>
</tr>
<tr>
<td>1310-73-2</td>
<td></td>
<td></td>
<td>RQ 454 kg final RQ</td>
</tr>
<tr>
<td>Sodium hypochlorite</td>
<td>100 lb</td>
<td>-</td>
<td>RQ 100 lb final RQ</td>
</tr>
<tr>
<td>7681-52-9</td>
<td></td>
<td></td>
<td>RQ 45.4 kg final RQ</td>
</tr>
</tbody>
</table>

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>1310-73-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium hypochlorite</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>7681-52-9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

U.S. EPA Label Information
EPA Pesticide Registration Number Not Applicable

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards 3</th>
<th>Flammability 0</th>
<th>Instability 1</th>
<th>Physical and Chemical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>Health hazards 3</td>
<td>Flammability 0</td>
<td>Physical hazards 1</td>
<td>Personal protection X</td>
</tr>
<tr>
<td>Prepared By</td>
<td>kcs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue Date</td>
<td>01-Apr-2014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revision Date</td>
<td>23-Apr-2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revision Note</td>
<td>No information available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet