SAFETY DATA SHEET

Revision date 2015-04-06

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

Product identifier

Product name WS-132

Other means of identification

Product code 3212A
Synonyms Inorganic metal salt coagulant/floculant in aqueous solution

Recommended use of the chemical and restrictions on use

Recommended use [RU] No information available
Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Anderson Chemical Company
325 South Davis Avenue
Litchfield, MN 55355
320-693-2477

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC: (800) 424-9300
Outside USA - +1 (703) 527-3887 collect calls accepted

2. HAZARDS IDENTIFICATION

Classification

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

Skin corrosion/irritation Category 1
Serious eye damage/eye irritation Category 1
Corrosive to metals Category 1

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Color</th>
<th>Appearance</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>liquid</td>
<td>colorless to yellow</td>
<td>clear</td>
<td>no appreciable odor</td>
</tr>
</tbody>
</table>
DANGER

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

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
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
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
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
Absorb spillage to prevent material damage

Precautionary Statements - Storage
Store locked up
Store in corrosive resistant container with a resistant inner liner

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

Other information
* May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>weight-%</th>
<th>TRADE SECRET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Secret Ingredient</td>
<td>PROPRIETARY</td>
<td>45 - 55%</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

Eye contact
Remove contact lenses, if worn. Immediately flush with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of the entire surface. Washing within one minute is essential to achieve maximum effectiveness. Seek medical advice immediately.

Skin contact
Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
**Ingestion**
Do NOT induce vomiting. If vomiting should occur spontaneously, keep airway clear. Never give anything by mouth to an unconscious person. Get medical attention.

**Inhalation**
Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**Most important symptoms and effects, both acute and delayed**

**Acute effects**
Possible eye, skin, and respiratory tract irritation or burns.

**Chronic effects**
May aggravate existing skin, eye, and lung conditions. Persons with kidney disorders have an increased risk from exposure based on general information found on aluminum salts.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians**
Aluminum soluble salts may cause gastroenteritis if ingested. Treatment includes the use of demulcents. Note: Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

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### 5. FIRE-FIGHTING MEASURES

**Extinguishing media**

- **Suitable extinguishing media**
  Water fog, carbon dioxide, foam, dry chemical.

- **Extinguishing media which must not be used for safety reasons**
  No information available

**Special hazards arising from the substance or mixture**

- **Special Hazard**
  May produce hazardous fumes or hazardous decomposition products.

**Advice for firefighters**

- **Firefighting measures**
  Product is a water solution and nonflammable. In a fire, this product may build up pressure and rupture a sealed container; cool exposed containers with water spray. Use self-contained breathing apparatus in confined areas; avoid breathing mist or spray.

- **Special protective equipment for firefighters**
  Full protective clothing and approved self-contained breathing apparatus required for firefighting personnel.

**Explosion data**

- **Sensitivity to Mechanical impact**
  None.

- **Sensitivity to Static Discharge**
  None.

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### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions**
Wear adequate personal protective clothing and equipment. Approved breathing apparatus may be necessary.
Environmental precautions

Environmental precautions
Do not allow liquid to enter streams or waterways.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Build dikes as necessary to contain flow of large spills.

Methods for cleaning up
Clear spills immediately. For small spills, use soda ash to neutralize, an inert material to absorb. Place contaminated materials into containers and store in a safe place to await proper disposal. Caution: Use of soda ash may generate carbon dioxide gas. Provide adequate ventilation to spill area.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Keep container closed when not in use
Keep away from heat and open flame
Avoid contact with eyes, skin and clothing
Wear chemical splash goggles, gloves, and protective clothing when handling.
Wash thoroughly after handling
Avoid breathing vapor or mist
Use with adequate ventilation and employ respiratory protection where mist or spray may be generated.
FOR INDUSTRIAL USE ONLY.

Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container closed when not in use
Store in a cool, dry place away from direct heat.
Do not store in unlined metal containers.
Product may slowly corrode iron, brass, copper, aluminum, mild steel, and stainless steel.

Incompatible products
Alkalis.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls
Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Individual protection measures, such as personal protective equipment
Eye/face Protection
Wear chemical splash goggles and face shield (when eye and face contact is possible due to splashing or spraying of material).

Hand Protection
Appropriate chemical resistant gloves should be worn.

Skin and body protection
Standard work clothing and work shoes.

Respiratory protection
If exposures exceed the PEL or TLV, use NIOSH/MSHA approved respirator in accordance with OSHA Respiratory Protection Requirements under 29 CFR 1910.134. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Other personal protection data
Eyewash fountains and safety showers must be easily accessible.

Hygiene measures
Take off contaminated clothing and wash 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>Color</td>
<td>colorless to yellow</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>clear</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>no appreciable odor</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>0.5 - 1.5</td>
<td>as is</td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>-15 °C / 5 °F</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>104 °C / 220 °F</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
<td>No information available</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></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>Not applicable</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>Not applicable</td>
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</tr>
<tr>
<td>Vapor pressure</td>
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<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.340 - 1.400</td>
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</tr>
<tr>
<td>Solubility (water)</td>
<td>Soluble below pH 4</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>
Autoignition temperature
Decomposition temperature
Kinematic viscosity
Dynamic viscosity

Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Density</td>
<td>11.18 - 11.68 lb/gal</td>
</tr>
<tr>
<td>Bulk Density</td>
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</tr>
<tr>
<td>Explosive properties</td>
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</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Softening point</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No information available</td>
</tr>
<tr>
<td>Volatile organic compounds (VOCs) content</td>
<td>No information available</td>
</tr>
<tr>
<td>Percent Volatile, wt.%</td>
<td>40 - 65 %</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity

Reactivity
No data available.

Chemical stability

Chemical stability
Stable.

Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

Hazardous polymerization
No.

Conditions to avoid

Conditions to avoid
None.

Incompatible materials

Materials to avoid
Alkalis.

Hazardous decomposition products

Hazardous decomposition products
Thermal decomposition may release toxic and/or hazardous gases such as aluminum, Cl₂, and HCl.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Eye contact
Based on pH, this product is expected to cause severe eye irritation, possibly resulting in burns and eye damage. Prolonged exposure to Aluminum salts may cause conjunctivitis.

Skin contact
Prolonged and/or repeated contact will cause severe skin irritation and burns.

Ingestion
May be harmful if swallowed. May cause burns of the mouth, throat and stomach. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation
Inhalation of mist or spray may irritate respiratory tract and may cause burns and difficulty breathing.

Acute toxicity - Product Information

<table>
<thead>
<tr>
<th></th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>No information available</td>
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</tbody>
</table>

Acute toxicity - Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>weight-%</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Secret Ingredient</td>
<td>45 - 55%</td>
<td>&gt; 2000 mg/kg (Rat)</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Information on toxicological effects

Symptoms
No information available.

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

Skin corrosion/irritation
Causes burns

Serious eye damage/eye irritation
Risk of serious damage to eyes

Sensitization
No information available

Germ cell mutagenicity
No information available

Carcinogenicity
This product does not contain any components in concentrations greater than or equal to 0.1% that are listed as known or suspected carcinogens by NTP, IARC, ACGIH, or OSHA.

Reproductive toxicity
No information available

Specific target organ toxicity - Single exposure
No information available.

Specific target organ toxicity - 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 (oral) 4004 mg/kg

Other information
Conclusions are drawn from sources other than direct testing.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute aquatic toxicity - Product Information

<table>
<thead>
<tr>
<th>Species</th>
<th>LC 50 (96 hour, static, feeding &amp; renewal at 48 hours)</th>
<th>Pimephales promelas ¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>217.8 - 227.5 mg/L</td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>18.2 - 19.0 mg/L</td>
<td>Ceriodaphnia dubia¹</td>
</tr>
<tr>
<td>Algae/aquatic plants</td>
<td>Not determined</td>
<td></td>
</tr>
</tbody>
</table>

Persistence and degradability

Persistence and degradability
No information available

Bioaccumulative potential

Bioaccumulative potential
No information available

Mobility

Mobility
No information available

Results of PBT and vPvB assessment

PBT and vPvB assessment
No information available

Other adverse effects

Other information
¹ Generated from tests conducted by Pace Analytical Laboratories Oct., 2010 using EPA /600/4-90/027F.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, state and local regulations.

Contaminated packaging
Since empty containers retain product residue, follow label warnings even after container is emptied.

RCRA

Is the unused product a RCRA hazardous waste if discarded? (Yes/No) Yes
If yes, the EPA Hazardous Waste Code is: D002 (corrosivity)

14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>DOT</th>
<th>Regulated</th>
</tr>
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<tbody>
<tr>
<td>DOT UN/NA Number</td>
<td>UN3264</td>
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<tr>
<td>Proper shipping name</td>
<td>Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)</td>
</tr>
<tr>
<td>Hazard class</td>
<td>8</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
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<tr>
<td>ERG Number</td>
<td>154</td>
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<table>
<thead>
<tr>
<th>ICAO/IATA</th>
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<tbody>
<tr>
<td>UN number</td>
<td>UN3264</td>
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<tr>
<td>Packing group</td>
<td>III</td>
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<tr>
<td>ERG Code</td>
<td>8L</td>
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</table>

<table>
<thead>
<tr>
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<td>UN number</td>
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<td>III</td>
</tr>
<tr>
<td>EmS</td>
<td>F-A; S-B</td>
</tr>
<tr>
<td>Harmonized Tariff Number</td>
<td>2827.32</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

International Inventories

- TSCA (United States)
  All ingredients are on the inventory or exempt from listing

- Australia (AICS)
  All ingredients are on the inventory or exempt from listing

- Canada (DSL)
  All ingredients are on the inventory or exempt from listing

- Canada (NDSSL)
  None of the ingredients are on the inventory.

- China (IECSC)
  All ingredients are on the inventory or exempt from listing

- EINECS (European Inventory of Existing Chemical Substances)
  All ingredients are on the inventory or exempt from listing

- ELINCS (European List of Notified Chemical Substances)
  None of the ingredients are on the inventory.

- ENCS (Japan)
  All ingredients are on the inventory or exempt from listing

- South Korea (KECL)
  All ingredients are on the inventory or exempt from listing
Philippines (PICCS)
All ingredients are on the inventory or exempt from listing

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AICS - Australian Inventory of Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - China Inventory of Existing Chemical Substances
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

U.S. Federal Regulations

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.

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).

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

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.

U.S. 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>Polyaluminum Chloride</th>
<th>1327-41-9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota Hazardous Substance List</td>
<td>Present</td>
</tr>
<tr>
<td>Pennsylvania Right to Know List</td>
<td>Present</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA Rating</th>
<th>Health - 2</th>
<th>Flammability - 0</th>
<th>Instability - 0</th>
<th>Special Hazard - COR</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS Rating</td>
<td>Health - 2</td>
<td>Flammability - 0</td>
<td>Physical hazard - 0</td>
<td>Personal protection - X</td>
</tr>
</tbody>
</table>

Product code 3212A
Revision date 2015-04-06
Revision number 1
Disclaimer
The information provided in this 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