



# SAFETY DATA SHEET

## CF-85

Date prepared: September 25, 2025

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### 1. IDENTIFICATION

#### Product information

**Product name** CF-85

#### Recommended use of the chemical and restrictions on use

##### Use of the Substance/Mixture

Water treatment chemical.

##### Recommended restrictions on use

Do not use for other purposes than the identified uses.

#### Supplier's details

Chemstream, Inc.  
511 Railroad Avenue  
Homer City, PA 15748  
Telephone (724) 915-8388  
Fax (724) 915-8374  
Website: chemstream.com

#### Emergency telephone number

CHEMTREC (24 Hours): 1-800-424-9300

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### 2. HAZARDS IDENTIFICATION

#### GHS Classification

The product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).,

#### GHS-Labeling

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS).

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### Hazard(s) not otherwise classified (HNOC) or not covered/classified by GHS

**Advice;** Small amounts of hydrogen chloride may be released at temperatures above the boiling point.

**Potential environmental effects;** May lower the pH of water and thus be harmful to aquatic organisms.

**Remarks;** This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Substances /Mixtures

Mixture

Chemical nature : Dialuminium Chloride Pentahydroxide

CAS-No. 12042-91-0

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS).

### Further information

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

## 4. FIRST AID MEASURES

### Description of first aid measures

#### General advice

Show this safety data sheet to the doctor in attendance. First aider needs to protect himself.

#### Inhalation

Move to fresh air. Keep warm. If symptoms persist, seek medical advice.

Call a physician if irritation develops or persists.

#### Skin contact

Rinse with water. If symptoms persist, seek medical advice.

#### Eye contact

Rinse thoroughly with plenty of water, also under the eyelids. If possible use lukewarm water. If symptoms persist, call a physician.

#### Ingestion

Rinse mouth with water. Do NOT induce vomiting. If symptoms persist, call a physician.

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

Symptoms : The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.

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### Indication of immediate medical attention and special treatment needed, if necessary

Treatment : All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically.

## 5. FIREFIGHTING MEASURES

### Suitable extinguishing media

Foam, Dry powder, Water spray, Carbon dioxide (CO<sub>2</sub>)

### Unsuitable extinguishing media

None known.

### Special hazards arising from the substance or mixture

Small amounts of hydrogen chloride may be released at temperatures above the boiling point. Heating above the decomposition temperature can cause formation of hydrogen chloride.

### Special protective actions for fire-fighters

Exposure to decomposition products may be a hazard to health. Wear self-contained breathing apparatus and protective suit.

### Further information

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Wear respiratory protection. Ensure adequate ventilation.

### Environmental precautions

Prevent product from entering the environment. Restrict the spread of the spillage by using inert absorbent material (sand, gravel). Cover the drains. Must be disposed of in accordance with local and national regulations. Local authorities should be advised if significant spillages cannot be contained.

### Methods and materials for containment and cleaning up

Clean-up methods - small spillage

Dilute residues with water and then neutralize with lime or limestone powder to a solid consistency. Shovel or sweep up remaining material. Must be disposed of in accordance with local and national regulations. After cleaning, flush away traces with water.

Clean-up methods - large spillage

Remove spill using a vacuum truck. Dilute residues with water and then neutralize with lime or limestone powder to a solid consistency. Shovel or sweep up remaining material. Must be disposed of in accordance with local and national regulations. After cleaning, flush away traces with water.

### Additional advice

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For personal protection see section 8.

### 7. HANDLING AND STORAGE

#### Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. For personal protection see section 8. The work place and work methods shall be organized in such a way that direct contact with the product is prevented or minimized. Keep away from incompatible materials. Contact with certain metals, e.g. aluminium and zinc, may form hydrogen gas, which in turn may form explosive mixtures of gases with air.

#### Conditions for safe storage, including any incompatibilities

Keep away from incompatible materials.

For quality reasons: Keep at temperatures above 0 °C. Keep at temperatures below 30 °C.

#### Materials for packaging

Suitable material: plastic (PE, PP, PVC), fiberglass-reinforced polyester, epoxy-coated concrete, titanium, resistant stainless or rubber-coated steel.

Unsuitable material: Avoid contact with unalloyed steel or galvanized surfaces., materials not resistant to acid, Copper, Aluminium, Iron

#### Materials to avoid:

Metals, Oxidizing agents

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

#### Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Eye wash bottle or emergency eye-wash fountain must be found in the work place.

#### Individual protection measures, such as personal protective equipment

##### Industrial Hygiene

Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location.

##### Respiratory protection

Respiratory protection is not required under normal handling conditions. In case of insufficient ventilation wear suitable respiratory equipment.

##### Hand protection

Chemical resistant gloves.

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### Skin and body protection

Wear protective clothing if necessary. Use rubber boots.

### Eye protection

Tightly fitting safety goggles.

### Environmental exposure controls

Do not allow uncontrolled discharge of product into the environment.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                                         |                                               |
|-----------------------------------------|-----------------------------------------------|
| Physical state                          | liquid                                        |
| Colour                                  | clear                                         |
| Odour                                   | odourless                                     |
| Odour Threshold                         | not determined                                |
| pH                                      | 4.0 - 4.6<br>Concentration: 30 g/l            |
| Freezing point/Melting point :          | 23 °F                                         |
| Initial boiling point and boiling range | Boiling point/boiling range<br>212 - 240.8 °F |
| Flash point                             | Not applicable, inorganic compound            |
| Evaporation rate                        | similar to water                              |
| Flammability (solid, gas)               | Not applicable                                |
| Explosive properties:                   |                                               |
| Lower explosion limit                   | Not applicable                                |
| Upper explosion limit                   | Not applicable                                |
| Oxidizing properties                    | Not oxidizing                                 |
| Vapour pressure                         | similar to water                              |
| Relative vapour density                 | similar to water                              |
| Density                                 | 1.32 - 1.360 g/cm <sup>3</sup> ( 68 °F)       |

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|                                               |                                    |
|-----------------------------------------------|------------------------------------|
| <b>Relative density</b>                       | No data available                  |
| <b>Solubility(ies):</b>                       |                                    |
| <b>Water solubility</b>                       | ( 68 °F)<br>completely miscible    |
| <b>Partition coefficient: n-octanol/water</b> | Not applicable, inorganic compound |
| <b>Auto-ignition temperature</b>              | No data available                  |
| <b>Decomposition temperature</b>              | > 212 °F                           |
| <b>Viscosity:</b>                             |                                    |
| <b>Viscosity, dynamic</b>                     | 20 - 30 mPa.s ( 68 °F)             |
| <b>Viscosity, kinematic</b>                   |                                    |
| <b>Oxidizing potential</b>                    | Not oxidizing                      |
| <br>                                          |                                    |
| <b>Volatile organic content (VOC)</b>         | Not applicable                     |
| <br>                                          |                                    |
| <b>Surface tension</b>                        | Not relevant                       |

## 10. STABILITY AND REACTIVITY

### Reactivity

Stable under recommended storage conditions.

### Chemical stability

Stable under normal conditions.

### Possibility of hazardous reactions

Bases cause exothermic reactions.

### Conditions to avoid

Avoid extreme temperatures.

### Incompatible materials

Metals  
Oxidizing agents

### Hazardous decomposition products

Thermal decomposition products:  
hydrogen chloride (HCl)  
Hydrogen, by reaction with metals

## 11. TOXICOLOGICAL INFORMATION

### Information on toxicological effects

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|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute oral toxicity               | <b>Dialuminium Chloride Pentahydroxide:</b><br>LD50/Rat/>2,000 mg/kg/OECD Test Guideline 401/GLP: yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Acute dermal toxicity             | <b>Dialuminium Chloride Pentahydroxide:</b><br>LD50/Rat/>2,000 mg/kg/OECD Test Guideline 402                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Skin corrosion/irritation         | Conclusion: Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Skin corrosion/irritation         | <b>Dialuminium Chloride Pentahydroxide:</b> Rabbit Result: No irritating effects. /OECD Test Guideline 404                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Serious eye damage/eye irritation | Conclusion: Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Serious eye damage/eye irritation | <b>Dialuminium Chloride Pentahydroxide:</b><br>Rabbit<br>Result: No eye irritation/OECD Test Guideline 405                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Respiratory or skin sensitisation |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Skin sensitisation                | /Rabbit<br>Result: Not sensitizing.<br>Remarks: Information given is based on data obtained from similar substances.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Skin sensitisation                | <b>Dialuminium Chloride Pentahydroxide:</b><br>/Guinea pig<br>Not sensitizing./OECD Test Guideline 406                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Germ cell mutagenicity            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Genotoxicity in vitro             | Remarks: Based on available data, the classification criteria are not met.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Genotoxicity in vitro             | <b>Dialuminium Chloride Pentahydroxide:</b><br>AMES test/Mutagenicity (Salmonella typhimurium - reverse mutation assay)/with and without<br>Result: negative<br>OECD Test Guideline 471<br><b>Dialuminium Chloride Pentahydroxide:</b><br>micronucleus test/In vitro mammalian cells/with and without<br>Result: negative<br>OECD Test Guideline 487<br>Remarks: Read-across (Analogy), 1327-41-9<br><br><b>Dialuminium Chloride Pentahydroxide:</b><br>Lymphoma/In vitro gene mutation study in mammalian cells/with and without<br>Result: negative<br>OECD Test Guideline 476<br>Remarks: Read-across (Analogy), 1327-41-9 |

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### Carcinogenicity

#### Carcinogenicity

Remarks: Based on available data, the classification criteria are not met.

#### Carcinogenicity

**Dialuminium Chloride Pentahydroxide:**

Not believed to be a carcinogen.

### Reproductive toxicity

#### Toxicity for reproduction

Remarks: Based on available data, the classification criteria are not met.

#### Toxicity for reproduction

**Dialuminium Chloride Pentahydroxide:**

Screening test/Rat/male and female/Oral/1,000 mg/kg/OECD Test Guideline 422

Remarks: Read-across (Analogy), 1327-41-9

Conclusion: No known effect.

**Dialuminium Chloride Pentahydroxide:**

#### Teratogenicity

Conclusion: Not believed to be toxic for reproduction.

**Dialuminium Chloride Pentahydroxide:**

Rat/female/Oral/3,225 mg/kg/OECD Test Guideline 452

Conclusion: Read-across (Analogy), Did not show mutagenic or teratogenic effects in animal experiments., CAS-No., 31142-56-0

#### Specific target organ toxicity - single exposure

Remarks:Based on available data, the classification criteria are not met.

#### Specific target organ toxicity - repeated exposure

Remarks:Based on available data, the classification criteria are not met.

### Aspiration hazard

#### Aspiration toxicity

No aspiration toxicity classification

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity effects

#### Aquatic toxicity

This material is not classified as dangerous for the environment. At environmentally relevant pH 5,5 – 8, the solubility of aluminium is low. Aluminium salts dissociate with water resulting in rapid formation and precipitation of aluminium hydroxides. At pH <5.5, the free ion (Al<sup>3+</sup>) becomes the prevalent form, the



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increased availability at this pH is reflected in higher toxicity. At pH 6.0–7.5, solubility declines due to the presence of insoluble  $\text{Al}(\text{OH})_3$ . At higher pH ( $\text{pH} > 8.0$ ), the more soluble  $\text{Al}(\text{OH})_4^-$  species predominate, which again increases availability.

Aluminium salts must not be released to rivers and lakes in an uncontrolled way and pH variations around 5 - 5.5 should be avoided.

LC50/48 h/Pimephales promelas (fathead minnow)/Acute Fish toxicity/US EPA-821-R-02-012:  $\geq 293$  mg/l

LC50/48 h/Ceriodaphnia dubia (Water flea)/Short-term (acute) aquatic hazard/US EPA-821-R-02-012:  $\geq 40.06$  mg/l

### Dialuminium Chloride Pentahydroxide:

/96 h/Danio rerio (zebra fish)/OECD Test Guideline 203:  $> 100$  mg/l

EC50/48 h/Daphnia magna (Water flea)/OECD Test Guideline 202: 98 mg/l

Remarks: Read-across (Analogy), CAS-No., 1327-41-9

EC50/72 h/Pseudokirchneriella subcapitata (green algae)/static test/OECD Test Guideline 201: 14 mg/l

EC50: 0.24 mg/l

Calculated as Al

### Toxicity to other organisms

No data is available on the product itself.

### Persistence and degradability

Biological degradability:

The methods for determining biodegradability are not applicable to inorganic substances. Hydrolyses in water.

Chemical degradation:

When reacting with water on pH range 5,8 - 8 precipitates of aluminium hydroxides are formed.

### Chemical degradation:

#### Dialuminium Chloride Pentahydroxide:

When reacting with water on pH range 5,8 - 8 precipitates of aluminium hydroxides are formed.

### Bioaccumulative potential

Partition coefficient: n-octanol/water: Not applicable, inorganic compound

#### Dialuminium Chloride Pentahydroxide:

Partition coefficient: n-octanol/water: log Pow:  $< 3$

### Mobility in soil

Vapour pressure: 0.032 ( 77 °F)

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Water solubility: completely miscible ( 68 °F)

Surface tension: Not relevant

Adsorbs on soil.

### Other adverse effects

May lower the pH of water and thus be harmful to aquatic organisms.

## 13. DISPOSAL CONSIDERATIONS

### Product

The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.

### Contaminated packaging

Dispose of in compliance with local and national regulations.  
Must be disposed of in accordance with local and national regulations.

## 14. TRANSPORT INFORMATION

### Land transport

Not classified as dangerous in the meaning of transport regulations.

### Sea transport

Not classified as dangerous in the meaning of transport regulations.

### Air transport

Not classified as dangerous in the meaning of transport regulations.

### Special precautions for user

None known.

## 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

### SARA Title III Section 311 Categories

No SARA Hazards

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### US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### US. CERCLA - Comprehensive Environmental Response, Compensation and Liability Act List

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

### California Proposition 65

WARNING: This product contains a chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Nickel dichloride (7718-54-9) <= 12.5 PPM

### Notification status

|             |                                                                                                                                                                                                       |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA         | : All components of this product are included in the United States TSCA Chemical Inventory with Active Status or are not required to be listed on the United States TSCA Chemical Inventory.          |
| Canada      | : All components of this product are included in the Canada Domestic Substance List (DSL) or are not required to be listed on the Canada Domestic Substance List (DSL).                               |
| Australia   | : All components of this product are included in the Australian Inventory of Industrial Chemicals (AIIC) or are not required to be listed on the Australian Inventory of Industrial Chemicals (AIIC). |
| China       | : All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.                                                                     |
| South Korea | : All components of this product are included in the Korean (ECL) inventory or are not required to be listed on the Korean (ECL) inventory.                                                           |
| Philippines | : All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine (PICCS) inventory.                                               |
| Japan       | : All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the                                                                                |

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|                |                                                                                                                                                                                              |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| European Union | : Japanese (ENCS) inventory.<br>: All components of this product are included in the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS. |
| New Zealand    | : All components of this product are included in the New Zealand inventory (NZIoC) or are not required to be listed on the New Zealand inventory (NZIoC).                                    |
| Taiwan         | : All components of this product are included on the Taiwan Toxic Chemical Substances Control Act Inventory.                                                                                 |

### 16. OTHER INFORMATION

#### HMIS Rating

Health: 0

Flammability: 0

Reactivity: 0

#### NFPA Rating

Health: 0

Fire: 0

Reactivity: 0

#### Training advice

Read the safety data sheet before using the product.

#### Further information

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.

This Safety Data Sheet is prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200), an adoption of the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Revision 3.

#### Sources of key data used to compile the Safety Data Sheet

Regulations, databases, literature, own tests.

#### Additions, Deletions, Revisions

Relevant changes have been marked with vertical lines.

**Date prepared:** 09/25/2025