1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification: Celeste Industries Corp
8221 Teal Drive, Suite 405
Easton, MD 21601

24 Hour Emergency Telephone Number: CHEMTREC: 800-424-9300

Customer Service: (410) 822-5775

Synonyms:
- Sodium dichloroisocyanurate dihydrate
- Sodium dichloro-s-triazinetrione dihydrate
- Dichlor dihydrate
- 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3-dichloro-, sodium salt dihydrate
- Troclose sodium, dihydrate
- SDCC dihydrate
- NaDCC dihydrate

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Color: White
Physical State: Solid, Granules
Odor: Chlorine
Signal Word: **WARNING**

**MAJOR HEALTH HAZARDS:** HARMFUL IF SWALLOWED. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION.

**AQUATIC TOXICITY:** Very toxic to aquatic organisms. Very toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS:** Contact with acids liberates toxic gas. Avoid breathing dust. Wash skin and contaminated clothing thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear gloves, protective clothing, eye, and face protection. Collect spillage. Store in well-ventilated place. Keep container tightly closed. Store in a secure manner.

**POTENTIAL HEALTH EFFECTS:**

**Inhalation:** This material in the form as sold is not expected to produce respiratory effects. Particles of respirable size are generally not encountered. The respirable fraction is typically less than 0.1% by weight for the granular and extra granular grades. If ground or otherwise in a powdered form, effects similar to a corrosive substance may occur. May cause severe irritation of the respiratory tract with coughing, choking, pain and possibly burns of the mucous membranes. If significant or prolonged exposure occurs, pulmonary edema may develop, either immediately or more often within a period of 5-72 hours. The symptoms may include tightness in the chest, dyspnea, frothy sputum, cyanosis, and dizziness. Physical findings may include moist rales, low blood pressure and high pulse pressure. Severe cases may be fatal.

**Skin contact:** This material is irritating to the skin. Direct contact with wet material or by moist skin may cause severe irritation, pain, and possibly burns. Dry material is less irritating than wet material. This material is not a skin sensitizer based on studies with guinea pigs.

**Eye contact:** This material is corrosive to the eye. Direct contact may cause severe irritation, pain and burns, possibly severe, and permanent damage including blindness. The degree of injury depends on the concentration and duration of contact.

**Ingestion:** Not a likely route of exposure. Harmful if swallowed. Ingestion may cause immediate pain and severe burns of the mucous membranes. There may be discoloration of the tissues. Swallowing and speech may be difficult at first and then almost impossible. The effects on the esophagus and gastrointestinal tract may range from irritation to severe corrosion. Edema of the epiglottis and shock may occur.

**Chronic Effects:** Based on animal studies, exposure to concentrations of monosodium cyanurate at the solubility limit may cause cardiovascular, kidney and urinary bladder effects.

See Section 11: TOXICOLOGICAL INFORMATION

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Component</th>
<th>%</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dichloroisocyanurate dihydrate</td>
<td>98 - 100</td>
<td>51580-86-0</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>0.1 - 1</td>
<td>7647-14-5</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

INHALATION: Move to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation and/or Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

SKIN CONTACT: Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing and shoes before reuse. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

EYE CONTACT: Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: Never give anything by mouth to an unconscious or convulsive person. If swallowed, do not induce vomiting. Give water. If vomiting occurs spontaneously, keep airway clear. Give water when vomiting stops. GET MEDICAL ATTENTION IMMEDIATELY.

Notes to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE-FIGHTING MEASURES

Fire Hazard: Negligible fire hazard. If heated by outside source to temperatures above 240 C (464 F), this product will undergo decomposition with the evolution of noxious gases but no visible flame. Wet material may generate nitrogen trichloride, an explosion hazard.

Extinguishing Media: Flood with water. Do not use dry chemicals, carbon dioxide or halogenated extinguishing agents.

Fire Fighting: Consider evacuation of personnel located downwind. Keep unnecessary people away, isolate hazard area and deny entry. Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Material which appears undamaged except for being damp on the outside, should be opened and inspected immediately. DO NOT attempt to reseal contaminated drums. Damp material should be neutralised to a non-oxidising state. Contact Celeste Industries for instructions for handling and disposal of damp material.

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Hazardous Combustion Products: Chlorine, Nitrogen, Nitrogen trichloride, Cyanogen chloride, Oxides of carbon, Phosgene

6. ACCIDENTAL RELEASE MEASURES
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**Occupational Release:** Keep unnecessary people away, isolate hazard area and deny entry. DO NOT add water to spilled material. DO NOT use floor sweeping compounds to clean up spills. Sweep and scoop spilled material into clean, dedicated equipment. Every attempt should be made to avoid mixing spilled material with other chemicals or debris when cleaning up. DO NOT attempt to reseal contaminated drums. DO NOT transport wet or damp material. Damp material should be neutralized to a non-oxidizing state. Contact Celeste Industries for instructions for handling and disposal of damp material. Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies.

7. HANDLING AND STORAGE

**Storage Conditions:** Store in original container and in a dry area where temperatures do not exceed 52 ºC (125 ºF) for 24 hours. Store and handle in accordance with all current regulations and standards. Do not allow water to get in container. If liner is present, tie after each use. Keep container tightly closed and properly labeled. Store containers on pallets. Keep away from food, drink and animal feed. Keep separated from incompatible substances (see Section 10 of the Safety Data Sheet). Product has an indefinite shelf life if stored in original container in a cool, dry place.

**Handling Procedures:** Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or dust when opening container. Avoid creation of dust. Wash thoroughly after handling. NEVER add water to this product. Always add product to large quantities of water. Use clean, dry utensils. Do not add the product to any dispensing device containing residuals of other products.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Regulatory Exposure limit(s):** None

**Non-Regulatory Exposure Limit(s):** None

**Additional Advice:** Chlorine and chlorine compounds may be found in slight amounts in the head space of containers of ACL® Products.

**ENGINEERING CONTROLS:** Use only in well-ventilated areas. Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT:**
- **Eye Protection:** Wear chemical safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
- **Skin and Body Protection:** Wear protective clothing to minimize skin contact. When potential for contact with dry material exists, wear disposable coveralls suitable for dust exposure, such as Tyvek®. Contaminated clothing should be removed and laundered before reuse.
- **Protective Material Types:** Butyl rubber, Natural rubber, Neoprene, Nitrile, Polyvinyl chloride (PVC), Tyvek®
Respiratory Protection: A NIOSH approved respirator with N95 (dust, fume, mist) cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. The added protection of a full face piece respirator is required when visible dusty conditions are encountered and eye irritation may occur. Acid gas cartridges with N95 filters are required when fumes or vapor may be generated. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid, Granules</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
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<tr>
<td>Odor</td>
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<td>Melting Point/Range</td>
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<tr>
<td>Vapor Pressure</td>
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<tr>
<td>Specific Gravity (water=1)</td>
<td>1.95 @ 25 °C (gm/L)</td>
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<tr>
<td>Vapor Density (air=1)</td>
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<td>Bulk Density</td>
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<tr>
<td>Water Solubility</td>
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<tr>
<td>pH</td>
<td>6 - 7 @ 25 °C (1% solution)</td>
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<tr>
<td>Volatility</td>
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<td>Partition Coefficient (n-octanol/water):</td>
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</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity/ Stability: Stable at normal temperatures and pressures.

Conditions to Avoid: Do not get water inside container. Wet material may generate nitrogen trichloride, an explosion hazard. Avoid contact with easily oxidisable organic material.

Incompatibilities/ Materials to Avoid: Acids, Ammonia, Bases, Floor sweeping compounds, Calcium hypochlorite, Reducing agents, Organic solvents and compounds

Hazardous Decomposition Products: Chlorine, Nitrogen, Nitrogen trichloride, Cyanogen chloride, Oxides of carbon, Phosgene

Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION
11. TOXICOLOGICAL INFORMATION

IRRITATION DATA:
- PRIMARY SKIN IRRITATION: Severe Irritation, Corrosive (rabbit, 24 hr)
- PRIMARY EYE IRRITATION: Severe Irritation, Corrosive (rabbit, 24 hr)

TOXICITY DATA:

| LD50 Oral:     | 1823 mg/kg oral-rat LD50 |
| LC50 Inhalation: | 0.27-1.17 mg/L (4 hr - Rat) |
| LD50 Dermal:   | >5000 mg/kg skin-rabbit LD50; |

TOXICITY: Monosodium cyanurate was administered via drinking water to rats for 104 weeks at concentrations of 0, 400, 1200, 2400, and 5375 ppm (solubility limit). No compound-related effects on body weights, clinical signs of toxicity or food or water consumption were noted during the study. An increased incidence of gross lesions in the urinary tract, calculi in the kidney and lesions in the heart were observed in males receiving the highest dose level of 5375 ppm (solubility limit). The health effects seen in this study were due to precipitation of the test substance in the urinary tract when the test substance was fed at the solubility limit. Adverse health effects were not seen at lower doses where precipitation did not occur.

CARCINOGENICITY: This product is not classified as a carcinogen by NTP, IARC or OSHA.

MUTAGENIC DATA: Not mutagenic in 5 salmonella strains and 1 E. coli strain with or without mammalian microsomal activation.

REPRODUCTIVE TOXICITY:
- There are no known or recorded effects on reproductive function or fetal development

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

- Fish Toxicity:
  - LC50 bluegill sunfish: 0.25-1.0 mg/L (96 hour)
  - LC50 rainbow trout: 0.13-0.36 mg/L (96 hour)
  - LC50 inland silversides: 1.21 mg/L (96 hour)

- Invertebrate Toxicity:
  - LC50 Water flea: 0.196 mg/L (48 hour)
  - LC50 Mysid shrimp: 1.65 mg/L (96 hour)

- Other Toxicity:
  - LD50 Mallard duck (oral): 1,916 mg/kg
  - LD50 N. Bobwhite Quail (oral): 1,732 mg/kg
  - LD50 Mallard duck (diet): >10,000 ppm
  - LD50 N. Bobwhite Quail (diet): >10,000 ppm

FATE AND TRANSPORT:

BIODEGRADATION: This material is subject to hydrolysis. Cyanuric acid produced by hydrolysis is biodegradable.
PERSISTENCE:
This material is believed not to persist in the environment. Free available chlorine is rapidly consumed by reaction with organic and inorganic materials to produce chloride ion. The stable degradation products are chloride ion and cyanuric acid.

BIOCONCENTRATION: This material hydrolyses in water liberating free available chlorine and cyanuric acid. These products are not bioaccumulative.

ADDITIONAL ECOLOGICAL INFORMATION: This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of appropriate regulatory requirements (e.g. permit and the permitting authority has been notified in writing prior to discharge). Do not discharge effluent containing this product into sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your local or regional regulatory water boards and/or other appropriate regulatory offices.

13. DISPOSAL CONSIDERATIONS

Waste from material: Use or reuse if possible. This product is under review of the European Biocidal Products Directive (BPD). This material is a registered pesticide. Dispose in accordance with all applicable regulations. Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. DO NOT transport wet or damp material. Damp material should be neutralized to a non-oxidizing state. Contact Celeste Industries for instructions for handling and disposal of damp material. See product label for container disposal information. May be subject to disposal regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
 Status:
Non-Bulk Packaging: Not Regulated under DOT
Bulk Packaging or Shipment by Vessel: Regulated

PROPER SHIPPING NAME: Environmentally Hazardous Substance, Solid, n.o.s. (Sodium dichloroisocyanurate dihydrate), Marine Pollutant
UN NUMBER: UN3077
HAZARD CLASS/ DIVISION: 9
PACKING GROUP: III
LABELING REQUIREMENTS: 9, Marine Pollutant
MARINE POLLUTANT: Sodium dichloroisocyanurate dihydrate

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Environmentally Hazardous Substance, Solid, n.o.s. (Sodium dichloroisocyanurate dihydrate), Marine Pollutant
UN NUMBER: UN3077
CLASS OR DIVISION: 9
PACKING/RISK GROUP: III
CAN. MARINE POLLUTANT: Sodium dichloroisocyanurate dihydrate
15. REGULATORY INFORMATION

U.S. REGULATIONS

- **OSHA REGULATORY STATUS:**
  This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) (US)

- **CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):** Not regulated.

- **EPCRA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):** Not regulated

- **EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):**
  Fire Hazard, Reactive Hazard, Acute Health Hazard

- **EPCRA SECTION 313 (40 CFR 372.65):** Not regulated.

- **OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):** Not regulated

- **FIFRA REGULATIONS:** Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

NATIONAL INVENTORY STATUS

- **U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):** All components are listed or exempt.

- **TSCA 12(b):**
  This product is not subject to export notification

- **Canadian Chemical Inventory:** All components of this product are listed on either the DSL or the NDSL.

STATE REGULATIONS

<table>
<thead>
<tr>
<th>Sodium dichloroisocyanurate dihydrate</th>
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<tbody>
<tr>
<td>California Proposition 65 Cancer WARNING:</td>
<td>Not Listed</td>
</tr>
<tr>
<td>California Proposition 65 CRT List - Male reproductive toxin:</td>
<td>Not Listed</td>
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<tr>
<td>California Proposition 65 CRT List - Female reproductive toxin:</td>
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<tr>
<td>Massachusetts Right to Know Hazardous Substance List</td>
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<td>New Jersey Special Health Hazards Substance List</td>
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<td>New Jersey - Environmental Hazardous Substance List</td>
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<td>Pennsylvania Right to Know Hazardous Substance List</td>
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<td>Rhode Island Right to Know Hazardous Substance List</td>
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<table>
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<tr>
<th>Sodium chloride</th>
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<td>California Proposition 65 Cancer WARNING:</td>
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<tr>
<td>California Proposition 65 CRT List - Male reproductive toxin:</td>
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</tr>
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</table>
CANADIAN REGULATIONS
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

WHMIS - Classifications of Substances
• Material is regulated as a pesticide, therefore is not regulated under WHMIS

16. OTHER INFORMATION

Prepared by: Celeste Industries – Department of Technology & Quality

HMIS: (SCALE 0-4) (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)
Health: 3 Flammability: 0 Reactivity: 1

NFPA 704 - Hazard Identification Ratings (SCALE 0-4)
Health: 2 Flammability: 0 Reactivity: 1

Revision History Comment:
• New issue

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