1. Identification

Product identifier: CR-7S

Other means of identification: None.

Recommended use: Industrial use.

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:

**CMC Materials; 870 North Commons Drive; Aurora, IL 60504; United States**

Telephone: +1.630.375.6631

**CMC Materials; Amber Business Centre; Riddings Alfreton Derbyshire DE55 4DA; United Kingdom**

Telephone: +44 (0) 1773 844200

E-mail: CMCPurchaseStewardship@cmcmaterials.com

**CMC Materials; 300 Throckmorton; Fort Worth, Texas 76102; United States**

Telephone: +1.817.761.6100

**CMC Materials; Les Vieilles Hayes; 50620 Saint Fromond; France**

Telephone: +33 (0) 2 33 75 64 00

E-mail: CMCPurchaseStewardship@cmcmaterials.com

**CMC Materials; 9 Tuas View Lane; Singapore 637569**

Telephone: 65.3163.6666

**CMC Materials; Via Umbria 4; 20098 San Giuliano Milanese (MI); Italy**

Telephone: +39 02 988381 / +44 (0) 1773 844200

E-mail: CMCPurchaseStewardship@cmcmaterials.com

Emergency phone number:

For Dangerous Goods Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:

CHEMTREC US

+1-800-424-9300

CHEMTREC International

+1-703-741-5970

2. Hazard(s) identification

**Physical hazards:** Corrosive to metals Category 1

**Health hazards:**
- Skin corrosion/irritation Category 1C
- Serious eye damage/eye irritation Category 1
- Sensitization, skin Category 1

**Environmental hazards:**
- Hazardous to the aquatic environment, acute hazard Category 2
- Hazardous to the aquatic environment, long-term hazard Category 2

**OSHA defined hazards:** Not classified.

**Label elements:**
Signal word: Danger
Hazard statement: May be corrosive to metals. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.
Precautionary statement:
Prevention: Keep only in original packaging. Do not breathe mist/vapors. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response: If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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/doctor. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Collect spillage.
Storage: Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC): None known.
Supplemental information: None.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diammonium hexanitratocerate</td>
<td></td>
<td>16774-21-3</td>
<td>6 - 9</td>
</tr>
<tr>
<td>Perchloric acid</td>
<td></td>
<td>7601-90-3</td>
<td>6 - 9</td>
</tr>
</tbody>
</table>

Composition comments: All concentrations are in percent by weight unless otherwise indicated. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison control center or doctor for treatment advice.

Skin contact: Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion: Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed: Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause sensitization by skin contact. Dermatitis. Rash.

Indication of immediate medical attention and special treatment needed: Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Unsuitable extinguishing media: Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical: Contact with metals may evolve flammable hydrogen gas. During fire, gases hazardous to health may be formed. Combustion products may include: chlorine, oxygen, chlorine oxides, hydrogen chloride, cerium oxides.

Special protective equipment and precautions for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions: In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Dike fire control water for later disposal. Water runoff can cause environmental damage. Avoid discharge into drains, water courses or onto the ground.

Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards: Contact with metals may evolve flammable hydrogen gas.
6. Accidental release measures

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

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**

This product is miscible in water. Should not be released into the environment. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Retain and dispose of contaminated wash water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

**Environmental precautions**

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

**Precautions for safe handling**

Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

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

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

**Occupational exposure limits**

This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

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

- **Eye/face protection**
  Wear approved chemical safety goggles. Wear face shield if there is risk of splashes.

- **Skin protection**
  Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

- **Hand protection**
  Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

- **Other**
  Wear appropriate thermal protective clothing, when necessary.

- **Respiratory protection**
  In case of insufficient ventilation, wear suitable respiratory equipment. Wear NIOSH approved respirator appropriate for airborne exposure at the point of use. Appropriate respirator selection should be made by a qualified professional.

- **Thermal hazards**
  Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

**Appearance**

| Physical state | Liquid. |
| Form           | Clear liquid. |
| Color          | Yellow/orange. |
| Odor           | Faint acid odor. |
| Odor threshold | Not available. |
| pH             | <1.89 |
Melting point/freezing point 17.6 °F (-8 °C)
Initial boiling point and boiling range 227.12 °F (108.4 °C) (102.3 kPa)
Flash point Not available.
Evaporation rate Not available.
Flammability (solid, gas) Not applicable.
Upper/lower flammability or explosive limits
Explosive limit - lower (%) Not available.
Explosive limit - upper (%) Not available.
Vapor pressure Not available
Vapor density 2.4
Relative density 1.1 (20 °C)
Solubility(ies)
Solubility (water) Completely miscible with water.
Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.
Other information
Explosive properties Not explosive.
Oxidizing properties Not oxidizing.
10. Stability and reactivity
Reactivity Reacts violently with strong alkaline substances. This product may react with reducing agents. May be corrosive to metals.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions Contact with metals may evolve flammable hydrogen gas.
Conditions to avoid Heat. Contact with incompatible materials.
Hazardous decomposition products None known.
11. Toxicological information
Information on likely routes of exposure
Inhalation May cause irritation to the respiratory system.
Skin contact Causes severe skin burns. May cause an allergic skin reaction.
Eye contact Causes serious eye damage.
Ingestion Causes digestive tract burns. May be harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause sensitization by skin contact. Dermatitis. Rash.
Information on toxicological effects
Acute toxicity May be harmful if swallowed.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diammonium hexanitratocerate (CAS 16774-21-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg, 24 Hours</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>300 - 2000 mg/kg</td>
</tr>
</tbody>
</table>
Perchloric acid (CAS 7601-90-3)

**Components**

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>200 - 2000 mg/kg</td>
</tr>
</tbody>
</table>

**Acute**

**Skin corrosion/irritation**
Causes severe skin burns and eye damage.

**Serious eye damage/eye irritation**
Causes serious eye damage.

**Respiratory or skin sensitization**

- **Respiratory sensitization**
  Not a respiratory sensitizer.

- **Skin sensitization**
  May cause an allergic skin reaction.

**Germ cell mutagenicity**
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**
Not classifiable as to carcinogenicity to humans.

- **IARC Monographs. Overall Evaluation of Carcinogenicity**
  Not listed.

  Not listed.

- **US. National Toxicology Program (NTP) Report on Carcinogens**
  Not listed.

**Reproductive toxicity**
This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**
Not classified.

**Specific target organ toxicity - repeated exposure**
Not classified.

**Aspiration hazard**
Not an aspiration hazard.

**Chronic effects**
Prolonged skin contact may cause dermatitis.

**12. Ecological information**

**Ecotoxicity**
Toxic to aquatic life with long lasting effects.

**Persistence and degradability**
The product solely consists of inorganic compounds which are not biodegradable.

**Bioaccumulative potential**
No data available.

**Mobility in soil**
The product is soluble in water. Expected to be mobile in soil.

**Other adverse effects**
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**13. Disposal considerations**

**Disposal instructions**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**
Dispose in accordance with all applicable regulations.

**Hazardous waste code**
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products**
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

**Contaminated packaging**
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport information**

**DOT**

- **UN number**
  UN3264

- **UN proper shipping name**
  Corrosive liquid, acidic, inorganic, n.o.s. (Diammonium hexanitratocerate, Perchloric acid)

- **Transport hazard class(es)**
  Class 8
  Subsidiary risk -
Label(s)  8
Packing group  II
Environmental hazards
Marine pollutant  Yes
Special precautions for user  Read safety instructions, SDS and emergency procedures before handling.
Special provisions  IB3, T7, TP1, TP28
Packaging exceptions  154
Packaging non bulk  203
Packaging bulk  241
ERG number  154

IATA
UN number  UN3264
UN proper shipping name  Corrosive liquid, acidic, inorganic, n.o.s. (Diammonium hexanitratocerate, Perchloric acid)
Transport hazard class(es)
Class  8
Subsidiary risk  -
Packing group  II
Environmental hazards  Yes
ERG Code  8L
Special precautions for user  Read safety instructions, SDS and emergency procedures before handling.

IMDG
UN number  UN3264
UN proper shipping name  CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Diammonium hexanitratocerate, Perchloric acid)
Transport hazard class(es)
Class  8
Subsidiary risk  -
Packing group  II
Environmental hazards
Marine pollutant  Yes
EmS  F-A, S-B
Special precautions for user  Read safety instructions, SDS and emergency procedures before handling.

General information  IMDG Regulated Marine Pollutant. DOT Regulated Marine Pollutant.

15. Regulatory information
US federal regulations
Toxic Substances Control Act (TSCA)  All components of the mixture on the TSCA 8(b) inventory are designated “active”.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
SARA 304 Emergency release notification
Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 302 Extremely hazardous substance
Not listed.
SARA 311/312 Hazardous chemical  Yes
Classified hazard categories  Corrosive to metal
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
**SARA 313 (TRI reporting)**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perchloric acid</td>
<td>7601-90-3</td>
<td>6 - 9</td>
</tr>
</tbody>
</table>

**Other federal regulations**

- **Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**
  Not regulated.

- **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**
  Not regulated.

**Safe Drinking Water Act (SDWA)**

- **US state regulations**
  - **California Proposition 65**
    California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

**International Inventories**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Industrial Chemicals (AICIS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).*

**16. Other information, including date of preparation or last revision**

- **Issue date** 05-13-2022
- **Version #** 01

**NFPA ratings**

![NFPA ratings: 0 0 3 0]

**Disclaimer**

CMC Materials cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.