



SAFETY DATA SHEET

1. Identification

Product identifier CR-7
Other means of identification Not available.
Recommended use Industrial use.
Recommended restrictions None known.

Manufacturer / Importer / Supplier / Distributor information

Manufacturer/Supplier KMG Electronic Chemicals, Inc.
Address 300 Throckmorton, Suite 1900, Fort Worth, Texas 76102 US
Phone number 817-761-6100
Emergency phone number CHEMTREC: 1-800-424-9300 (Transportation emergency only)
3E Emergency Services +1 866-706-3266 Access code: 333035

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

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage.

Precautionary statement

Prevention Do not breathe mist. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Keep only in original container.

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. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Absorb spillage to prevent material damage.

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) Not classified.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Cerate(2-), hexakis(nitrato-kO)-,diammonium, (OC-6-11)-	16774-21-3	8
Perchloric acid	7601-90-3	7

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Move injured person into fresh air and keep person calm under observation. Get medical attention if symptoms occur.

Skin contact	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention 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. Hold eyelids apart. Continue rinsing. Get medical attention immediately.
Ingestion	Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Obtain medical attention and take along these instructions.
Most important symptoms/effects, acute and delayed	Corrosive. Prolonged contact causes serious eye and tissue damage. May cause burns in mucous membranes, throat, esophagus and stomach. May cause lung edema. Symptoms may be delayed.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. In case of shortness of breath, give oxygen. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	No restrictions known.
Specific hazards arising from the chemical	Fire may produce irritating, corrosive and/or toxic gases. Contact with most metals causes formation of flammable and explosive hydrogen gas.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Firefighters should wear full protective clothing including self contained breathing apparatus.
Fire-fighting equipment/instructions	Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
Specific methods	Use water spray to cool unopened containers.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Stay upwind. Keep out of low areas. Ensure adequate ventilation. Avoid any exposure. Use personal protection recommended in Section 8 of the SDS.
Methods and materials for containment and cleaning up	Should not be released into the environment. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewers, basements or confined areas. Large Spills: Dike far ahead of liquid spill for later disposal. Absorb spillage with suitable absorbent material. Ventilate the area. Collect in containers and seal securely. Flush with plenty of water to clean spillage area. Small Spills: Absorb spill with vermiculite or other inert material. Clean contaminated surface thoroughly. After removal flush contaminated area thoroughly with water. Never return spills in original containers for re-use.
Environmental precautions	Do not contaminate water.

7. Handling and storage

Precautions for safe handling	Avoid prolonged exposure. Handle and open container with care. Use only with adequate ventilation. Wash thoroughly after handling.
Conditions for safe storage, including any incompatibilities	Keep in a well-ventilated place. Keep container tightly closed. Keep this material away from food, drink and animal feed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	If enclosed handling cannot be guaranteed, ventilation and protective clothing must be used. Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. 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 safety glasses or goggles.

Skin protection	
Hand protection	Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate chemical resistant gloves. Wear appropriate chemical resistant clothing. Protective shoes or boots. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Wear chemical protective equipment that is specifically recommended by the Personal Protective Equipment manufacturer.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Remove and isolate contaminated clothing and shoes. Handle in accordance with good industrial hygiene and safety practice. Launder contaminated clothing before reuse.

9. Physical and chemical properties

Appearance	Orange liquid.
Physical state	Liquid.
Form	Liquid.
Color	Orange.
Odor	Faint acid odor.
Odor threshold	Not available.
pH	< 1
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.1 g/cm ³ (20 °C)
Solubility(ies)	Completely soluble in water.
Partition coefficient (n-octanol/water)	No data available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product reacts with: Metals. Metal oxides. Strong alkalis. Reducing agents. Oxidizing agents. Flammable/combustible material. Organic material
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Reacts with most metals to form flammable hydrogen gas.
Conditions to avoid	Heat. Contact with combustibles.
Incompatible materials	Amines. Incompatible with bases. This product may react with reducing agents. Flammable material. Combustible material. Organic material. Metals.

Hazardous decomposition products Contact with metals may evolve flammable hydrogen gas.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Causes digestive tract burns. May cause burns of the gastrointestinal tract if swallowed.
Inhalation	Causes severe respiratory tract irritation.
Skin contact	Causes severe skin burns. Causes permanent skin damage (scarring).
Eye contact	Causes severe eye burns. Causes permanent eye injury. Lachrymation (discharge of tears).

Symptoms related to the physical, chemical and toxicological characteristics Permanent eye damage including blindness could result. Will cause conjunctivitis. Shortness of breath. Cough. Sore throat.

Information on toxicological effects

Acute toxicity	May cause discomfort if swallowed.
Skin corrosion/irritation	Causes severe skin burns.
Serious eye damage/eye irritation	Causes severe eye damage.
Respiratory sensitization	Not classified.
Skin sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.
Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not classified.
Chronic effects	Prolonged inhalation may be harmful.
Further information	Erosion of exposed teeth.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	The product is water soluble and may spread in water systems.
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. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose in accordance with all applicable regulations.
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel] Waste codes should be assigned by the user based on the application for which the product was used.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in accordance with local regulations.

14. Transport information

DOT

UN number	UN3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (Perchloric acid)
Transport hazard class(es)	8
Subsidiary class(es)	-
Packing group	III
Environmental hazards	
Marine pollutant	No

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. (Perchloric acid)
Transport hazard class(es) 8
Subsidiary class(es) -
Packaging group III
Environmental hazards No
Labels required 8
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, Inorganic, N.o.s. (Perchloric acid)
Transport hazard class(es) 8
Subsidiary class(es) -
Packaging group III
Environmental hazards
Marine pollutant No
Labels required 8
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Cerate(2-), hexakis(nitrato-kO)-,diammonium, (OC-6-11)-	16774-21-3	8

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) Not regulated.

Food and Drug Administration (FDA)

Not regulated.

US state regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Perchloric acid (CAS 7601-90-3)

US. New Jersey Worker and Community Right-to-Know Act

Perchloric acid (CAS 7601-90-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Perchloric acid (CAS 7601-90-3)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

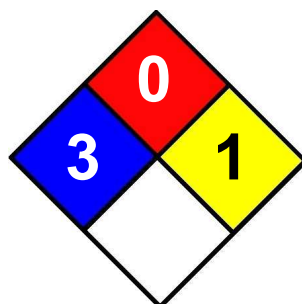
Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies 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** 23-January-2014**Revision date** -**Version #** 01**Further information** The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.**NFPA Ratings****References**

RTECS
 HSDB® - Hazardous Substances Data Bank
 GESTIS Substance Database
 C&L Inventory database. ACGIH
 EPA: Acquire database
 NLM: Hazardous Substances Data Base
 US. IARC Monographs on Occupational Exposures to Chemical Agents

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.