



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name Cal-Green (4190)
CAS # Mixture
Product use Condenser Coil Cleaner / Degreaser
Manufacturer Nu-Calgon
2008 Altom Court
St. Louis, MO 63146 US
Phone: 314-469-7000 / 800-554-5499
Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. Hazards Identification

Emergency overview CAUTION
MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.

Potential short term health effects

Routes of exposure Eye, Skin contact, Inhalation, Ingestion.

Eyes May cause irritation.

Skin May cause irritation.

Inhalation May cause respiratory tract irritation.

Ingestion May cause stomach distress, nausea or vomiting.

Target organs Eyes. Skin.

Chronic effects Prolonged or repeated exposure can cause drying, defatting and dermatitis.

Signs and symptoms Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

OSHA Regulatory Status This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential environmental effects Components of this product have been identified as having potential environmental concerns.

3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Sodium citrate	68-04-2	1 - 5
Alcohols, C9-11, ethoxylated	68439-46-3	0.5 - 1.5

4. First Aid Measures

First aid procedures

Eye contact Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.

Skin contact Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.

Inhalation If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.

Ingestion Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.

Notes to physician Symptoms may be delayed.

General advice If you feel unwell, seek medical advice (show the label where possible). 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. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties	Not flammable by WHMIS/OSHA criteria.
Extinguishing media	
Suitable extinguishing media	Dry chemical. Alcohol foam. Carbon dioxide. Fog.
Unsuitable extinguishing media	Not available
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Oxides of nitrogen. Oxides of carbon. Ammonia.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Environmental precautions	Do not discharge into lakes, streams, ponds or public waters.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills to original containers for re-use.

7. Handling and Storage

Handling	Use good industrial hygiene practices in handling this material. When using do not eat or drink. Avoid contact with skin and clothing. Avoid contact with eyes. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling. Avoid breathing vapors or mists of this product.
Storage	Keep out of reach of children. Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Exposure limits	
Ingredient(s)	Exposure Limits
Alcohols, C9-11, ethoxylated	ACGIH-TLV Not established OSHA-PEL Not established
Sodium citrate	ACGIH-TLV Not established OSHA-PEL Not established
Engineering controls	General ventilation normally adequate.
Personal protective equipment	
Eye / face protection	Wear safety glasses with side shields.
Hand protection	Rubber gloves. Confirm with a reputable supplier first.
Skin and body protection	As required by employer code.
Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Liquid.
Color	Colorless
Form	Liquid
Odor	Characteristic, Mild
Odor threshold	Not available
Physical state	Liquid
pH	9 (Concentrate)
Melting point	Not available
Freezing point	32.00 °F (0 °C)
Boiling point	212.00 °F (100 °C)
Pour point	Not available
Evaporation rate	As for water
Flash point	None to boiling
Auto-ignition temperature	None
Flammability limits in air, lower, % by volume	None
Flammability limits in air, upper, % by volume	None
Vapor pressure	Not available
Vapor density	Not available
Specific gravity	1.035
Octanol/water coefficient	Not available
Solubility (H2O)	Complete
Viscosity	Less than 5 cps
Percent volatile	90

10. Stability and Reactivity

Reactivity	This product may react with oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Acids. Oxidizers.
Hazardous decomposition products	May include and are not limited to: Oxides of nitrogen. Oxides of carbon. Ammonia.

11. Toxicological Information

Acute effects Information in this section is based on individual component information and not based on overall formula testing data.
Please note that the below values are calculated.

Acute LC50: 455 mg/l/4h, Rat, Inhalation
Acute LD50: 8987 mg/kg, Rat, Oral
Acute LD50: 38462 mg/kg, Rat, Dermal

Component analysis - LC50

Ingredient(s)	LC50
Alcohols, C9-11, ethoxylated	5 mg/l/4h rat
Sodium citrate	Not available

Component analysis - Oral LD50

Ingredient(s)	LD50
Alcohols, C9-11, ethoxylated	1200 mg/kg rat
Sodium citrate	5000 mg/kg rat

Effects of acute exposure

Eye May cause irritation.

Skin	May cause irritation.
Inhalation	May cause respiratory tract irritation.
Ingestion	May cause stomach distress, nausea or vomiting.
Sensitization	Non-hazardous by WHMIS/OSHA criteria.
Chronic effects	Non-hazardous by WHMIS/OSHA criteria.
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.
Reproductive effects	Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.
Name of Toxicologically Synergistic Products	Not available

12. Ecological Information

Ecotoxicity Information in this section is based on individual component information and not based on overall formula testing data. Components of this product have been identified as having potential environmental concerns.

Ecotoxicity - Freshwater Algae - Acute Toxicity Data

Sodium citrate 68-04-2 96 Hr EC50 Chlorella vulgaris: 18000 - 32000 mg/L

Ecotoxicity - Freshwater Fish - Acute Toxicity Data

Sodium citrate 68-04-2 96 Hr LC50 Poecilia reticulata: 18000-32000 mg/L

Ecotoxicity - Water Flea - Acute Toxicity Data

Sodium citrate 68-04-2 48 Hr EC50 Daphnia magna: 5600 - 10000 mg/L

Persistence / degradability	This product has not been tested. Alcohols, C9-11, ethoxylated (CAS# 68439-46-3) is readily biodegradable as per OECD 301D.
Bioaccumulation / accumulation	This product has not been tested.
Mobility in environmental media	This product has not been tested.
Environmental effects	This product has not been tested.
Aquatic toxicity	This product has not been tested.
Partition coefficient	This product has not been tested.
Chemical fate information	This product has not been tested.
Other adverse effects	This product has not been tested.

13. Disposal Considerations

Disposal instructions	Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

14. Transport Information

U.S. Department of Transportation (DOT)
Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG - Canada)
Not regulated as dangerous goods.

15. Regulatory Information

Canadian federal regulations	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.
WHMIS status	Controlled
WHMIS classification	Class D - Division 2B

WHMIS labeling



Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

US Federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA (Superfund) reportable quantity

None

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

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Clean Air Act (CAA) Not available

Clean Water Act (CWA) Not available

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

Inventory name

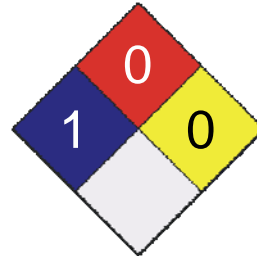
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	/ 1
Flammability	0
Physical Hazard	0
Personal Protection	X



Disclaimer

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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Prepared by Nu-Calgon Technical Service (314) 469-7000

Other information For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.