



## Exhibit C - CL49 SDS



# SAFETY DATA SHEET

### Section 1. Chemical Product and Company Identification

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Product Name:	ChemTreat CL49
Product Use:	Cooling Water Microbiocide
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	September 25, 2019
Revision Date:	September 25, 2019
Revision Number:	19092501AN

### Section 2. Hazard(s) Identification

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Signal Word: **DANGER**

GHS Classification(s): Skin corrosion/irritation – Category 1a  
Hazardous to the aquatic environment Acute – Category 2  
Hazardous to the Aquatic Environment Chronic – Category 2  
Corrosive to Metals – Category 1

Hazard Statement(s): H314 Causes severe skin burns and eye damage.  
H401 Toxic to aquatic life.  
H411 Toxic to aquatic life with long lasting effects.  
H290 May be corrosive to metals.

Precautionary Statement(s):

Prevention: P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P264 Wash thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P273 Avoid release into the environment.  
P234 Keep only in original container.

**Response:**

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.  
P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P391 Collect spillage.  
P390 Absorb spillage to prevent material damage.  
P310 Immediately call a POISON CENTER/doctor.

**Storage:**

P405 Store locked up.  
P406 Store in a corrosive resistant container with a resistant inner liner.

**Disposal:**

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

**System of Classification Used:**

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Hazards Not Otherwise Classified:**

None.

### ***Section 3. Composition/Hazardous Ingredients***

Component	CAS Registry #	Wt. %
Sodium chlorosulfamate	17172-27-9	5 – 10
Sodium bromosulfamate	134509-56-1	7 – 13
Sodium hydroxide	1310-73-2	5 – 10

**Comments**

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

## **Section 4. First Aid Measures**

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<b>Inhalation:</b>	Call a POISON CENTER or doctor/physician if you feel unwell.
<b>Eyes:</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
<b>Skin:</b>	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.
<b>Ingestion:</b>	Rinse mouth. Call a poison center or doctor/physician if you feel unwell.
<b>Most Important Symptoms:</b>	N/D
<b>Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:</b>	Probable mucosal damage may contraindicate the use of gastric lavage. Have the product container, label or MSDS with you when calling a poison control center or doctor, or when going for treatment.

## **Section 5. Fire Fighting Measures**

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<b>Flammability of the Product:</b>	Not flammable.
<b>Suitable Extinguishing Media:</b>	Use extinguishing media suitable to surrounding fire.
<b>Specific Hazards Arising from the Chemical:</b>	Thermal decomposition releases bromine and chlorine.
<b>Protective Equipment:</b>	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.



## ***Section 6. Accidental Release Measures***

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<b>Personal Precautions:</b>	Use appropriate Personal Protective Equipment (PPE).
<b>Environmental Precautions:</b>	This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, ponds, streams, estuaries, oceans or public waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.
<b>Methods for Cleaning up:</b>	Contain and/or absorb spill with inert material then place in suitable container.
<b>Other Statements:</b>	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Reportable Quantity of the product is 901 Gal.

## ***Section 7. Handling and Storage***

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<b>Handling:</b>	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
<b>Storage:</b>	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store in corrosive resistant container with a resistant liner. Do not store or handle in aluminum, steel, copper, or their alloys. Store above Freeze Point.

## Section 8. Exposure Controls/Personal Protection

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### Exposure Limits

Component	Source	Exposure Limits
Sodium chlorosulfamate	N/E	N/E
Sodium bromosulfamate	N/E	N/E
Sodium hydroxide	ACGIH TLV	2 mg/m <sup>3</sup> Ceiling
	OSHA PEL	2 mg/m <sup>3</sup> TWA

### Engineering Controls:

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

### Personal Protection

<b>Eyes:</b>	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.
<b>Skin:</b>	Wear appropriate chemical resistant gloves.
<b>Respiratory:</b>	None needed under normal conditions of use.

## Section 9. Physical and Chemical Properties

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<b>Physical State and Appearance:</b>	Liquid, Dark Straw, Clear
<b>Specific Gravity:</b>	1.331 @ 20°C
<b>pH:</b>	13.6 @ 20°C, 100.0%
<b>Freezing Point:</b>	32°F
<b>Flash Point:</b>	N/D
<b>Odor:</b>	Mild
<b>Melting Point:</b>	N/A
<b>Initial Boiling Point and Boiling Range:</b>	214 – 216°F
<b>Solubility in Water:</b>	Miscible
<b>Evaporation Rate:</b>	N/D
<b>Vapor Density:</b>	N/A
<b>Molecular Weight:</b>	N/D
<b>Viscosity:</b>	N/A
<b>Flammability (solid, gas):</b>	N/D
<b>Flammable Limits:</b>	N/A
<b>Autoignition Temperature:</b>	N/A
<b>Density:</b>	11.10 LB/GA
<b>Vapor Pressure:</b>	19 mmHg @ 25C
<b>% VOC:</b>	0
<b>Odor Threshold</b>	N/D



n-octanol Partition Coefficient  
Decomposition Temperature

N/D  
N/D

## Section 10. Stability and Reactivity

<b>Chemical Stability:</b>	Stable at normal temperatures and pressures.
<b>Incompatibility with Various Substances:</b>	Acids, Strong oxidizers, Reducing agents, Aluminum/aluminum alloys, Aldehydes, Alcohols, Metals or metal oxides, Copper/copper alloys, Iron.
<b>Hazardous Decomposition Products:</b>	None known.
<b>Possibility of Hazardous Reactions:</b>	None known.
<b>Reactivity:</b>	N/D
<b>Conditions To Avoid:</b>	N/D

## Section 11. Toxicological Information

### Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Sodium hydroxide	Oral	LD50	300 MG/KG	Rat
	Dermal	LD50	1350 MG/KG	Rabbit
ChemTreat CL49	Oral	LD50	2491 MG/KG	Rat
	Dermal	LD50	>2000 MG/KG	Rabbit

### Carcinogenicity Category

Component	Source	Code	Brief Description
Sodium chlorosulfamate	N/E	N/E	N/E
Sodium bromosulfamate	N/E	N/E	N/E
Sodium hydroxide	N/E	N/E	N/E

**Likely Routes of Exposure:** N/D

## Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

## Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

## Section 12. Ecological Information

### Ecotoxicity

Species	Duration	Type of Effect	Test Results
Daphnia magna	48h	EC50	4.8 mg/l
Bluegill Sunfish	96h	LC50	3.8 mg/l
Algae	96h	IC50	2.6 mg/l
Fathead Minnow	48h	LC50	8.5 mg/l
Daphnia pulex	48h	LC50	6.2 mg/l
Mysid Shrimp	24h	LC50	196 mg/l
	48h	LC50	48 mg/l
Inland Silverside	24h	LC50	8.7 mg/l
	96h	LC50	8.9 mg/l
Sheepshead Minnow	96h	LC50	36.4 mg/l
Ceriodaphnia dubia	48h	LC50	4.8 mg/l
	7d	IC25	6.2 mg/l

Species	Duration	Type of Effect	Test Results
	7d	NOEC	10 mg/l
	7d	LOEC	>10 mg/l
Fathead Minnow	7d	IC25	3.9 mg/l
	7d	LOEC	5 mg/l
	7d	NOEC	2.5 mg/l

**Persistence and Biodegradability:** N/D

**Bioaccumulative Potential:** N/D

**Mobility In Soil:** N/D

**Other Adverse Effects:** N/D

**Comments:** None.

## Section 13. Disposal Considerations

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Non-refillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by procedures approved by state and local authorities. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

## Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(HALOGENATED COMPLEX, SODIUM HYDROXIDE)	8	PGIII
Over 901 GA	RQ UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(HALOGENATED COMPLEX, SODIUM HYDROXIDE)	8	PGIII
IMDG	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(HALOGENATED COMPLEX, SODIUM HYDROXIDE)	8	PGIII
TDG	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(HALOGENATED COMPLEX, SODIUM HYDROXIDE)	8	PGIII
ICAO	UN3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(HALOGENATED COMPLEX, SODIUM HYDROXIDE)	8	PGIII

**Note:** N/A



## Section 15. Regulatory Information

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### Inventory Status

United States (TSCA):  
Canada (DSL/NDSL):

Exempt from TSCA inventory  
All ingredients listed or exempt.

### Federal Regulations

#### SARA Title III Rules

#### Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

#### Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Sodium chlorosulfamate	N/A	N/A	N/A
Sodium bromosulfamate	N/A	N/A	N/A
Sodium hydroxide	N/A	N/A	1000

Comments: None.

### State Regulations

California Proposition 65: None known.

#### Special Regulations

Component	States
Sodium chlorosulfamate	None.
Sodium bromosulfamate	None.
Sodium hydroxide	MA, MN, NY, PA, WA



## Compliance Information

<b>NSF:</b>	N/A
<b>Food Regulations:</b>	N/A
<b>KOSHER:</b>	This product is certified by the Orthodox Union as Kosher for Passover and year-round use. Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX; Fontana, CA.
<b>Halal:</b>	This product has not been evaluated for Halal approval.
<b>FIFRA:</b>	Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), EPA Registration Number: 3377-55-15300.
<b>Other:</b>	None

**Comments:** None.

## Section 16. Other Information

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### HMIS Hazard Rating

<b>Health:</b>	3
<b>Flammability:</b>	0
<b>Physical Hazard:</b>	0
<b>PPE:</b>	X

**Notes:** The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.  
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable



Abbreviation	Definition
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

**Prepared by:** Product Compliance Department; ProductCompliance@chemtreat.com

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## ***Disclaimer***

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