



# Surface Shield CS

Printed: 09/17/2018

Revision: 07/21/2017

Supersedes Revision: 09/26/2016

## SAFETY DATA SHEET

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Code:** 250416  
**Product Name:** Surface Shield CS  
**Category:** Corrosion Inhibitor and Scale Stabilizer for Cooling Systems  
**Company Name:** Chardon Laboratories, Inc. **Phone Number:**  
7300 Tussing Road (800)848-9526  
Reynoldsburg, OH 43068  
**Emergency Contact:** CHEMTREC (24 hour) (800)424-9300

### 2. HAZARDS IDENTIFICATION

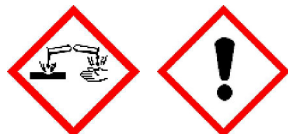
**Skin Corrosion/Irritation, Category 1B**

**Serious Eye Damage/Eye Irritation, Category 1**

**Skin Sensitization, Category 1**

**Aquatic Toxicity (Acute), Category 2**

**Aquatic Toxicity (Chronic), Category 3**



**GHS Signal Word:**

**Danger**

**GHS Hazard Phrases:**

H314 - Causes severe skin burns and eye damage.  
H317 - May cause an allergic skin reaction.  
H318 - Causes serious eye damage.  
H401 - Toxic to aquatic life.  
H412 - Harmful to aquatic life with long lasting effects.

**GHS Precaution Phrases:**

P260 - Do not breathe dust/fume/gas/mist/vapors/spray.  
P264 - Wash hands thoroughly after handling.  
P272 - Contaminated work clothing should not be allowed out of the workplace.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

**GHS Response Phrases:**

P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P302+352 - IF ON SKIN: Wash with plenty of soap and water.  
P303+361+353 - IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305+351+338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 - Immediately call a POISON CENTER or doctor/physician.  
P321 - Specific treatment see ... on this label.  
P333+313 - If skin irritation or rash occurs, seek medical advice/attention.  
P362+364 - Take off contaminated clothing and wash it before reuse.  
P363 - Wash contaminated clothing before reuse.

**GHS Storage and Disposal Phrases:**

P405 - Store locked up.  
P501 - Dispose of contents/container to an approved waste disposal site.



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Hazard Rating System:

HEALTH		2
FLAMMABILITY		1
PHYSICAL		0
PPE		D

HMIS:

Potential Health Effects  
(Acute and Chronic):

**Inhalation:** May cause respiratory irritation.  
**Skin Contact:** Irritating to skin. May cause sensitization by skin contact.  
**Eye Contact:** Causes serious eye damage.  
**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Ingredient(s)	Concentration
143239-08-1	2-Butenedioic acid (2Z)-, sodium salt (1:2), reaction products with sodium phosphonate (1:2)	2.5 -10.0 %
61791-26-2	Fatty alkylamine, ethoxylated	2.5 -10.0 %
68424-85-1	Alkyl(C12-C16) dimethylbenzylammonium chloride	2.5 -10.0 %

### 4. FIRST AID MEASURES

Emergency and First Aid  
Procedures:

**In Case of Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. Seek medical advice/attention if you feel unwell.

**In Case of Skin Contact:** Wash exposed area with soap and water thoroughly. Remove contaminated clothing and wash before reuse. Seek medical advice/attention immediately.

**In Case of Eye Contact:** Immediately flush eyes with running water for at least 15 minutes. Remove contact lenses if present after the first 5 minutes. Seek medical advice/attention immediately.

**In Case of Ingestion:** Rinse mouth with water. Do NOT induce vomiting. Give plenty of water. Never give anything to an unconscious person. Seek medical advice/attention immediately.

**Note to Physician:** Based on the individual reactions of the patient, the physician's judgment should be used to treat symptomatically and supportively.

### 5. FIRE FIGHTING MEASURES

**Flash Pt:** > 200.00 F (93.3 C) Method Used: ASTM D Closed Cup

**Explosive Limits:** LEL: No data. UEL: No data.

**Autoignition Pt:** No data.

**Suitable Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective.

**Fire Fighting Instructions:** Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Flammable Properties and Hazards:** No data available.



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### 6. ACCIDENTAL RELEASE MEASURES

<b>Protective Precautions, Protective Equipment and Emergency Procedures:</b>	Avoid contact with spilled material. Avoid breathing vapors, mist, or gas. Ventilate area of leak or spill. Wear appropriate personal protection equipment.
<b>Environmental Precautions:</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
<b>Steps To Be Taken In Case Material Is Released Or Spilled:</b>	Collect liquid by absorbing with an inert material (e.g. vermiculite, dry sand, earth), clean contaminated surface thoroughly, and place in a container for disposal according to local regulations.

### 7. HANDLING AND STORAGE

<b>Precautions To Be Taken in Handling:</b>	Avoid prolonged or repeated contact with eyes, skin, or clothing. Wash thoroughly after handling. Avoid breathing product vapors or mists. Use with adequate ventilation. Keep containers closed when not in use.
<b>Precautions To Be Taken in Storing:</b>	Store in a dry, cool, and well ventilated area away from heat sources and incompatible materials. Keep containers securely sealed. Protect containers from physical damage and check regularly for leaks.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Components (Chemical Name)	OSHA TWA	ACGIH TWA	Other Limits
143239-08-1	2-Butenedioic acid (2Z)-, sodium salt (1:2), reaction products with sodium phosphonate (1:2)	No data.	No data.	No data.
61791-26-2	Fatty alkylamine, ethoxylated	No data.	No data.	No data.
68424-85-1	Alkyl(C12-C16) dimethylbenzylammonium chloride	No data.	No data.	No data.

<b>Respiratory Equipment (Specify Type):</b>	Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
<b>Eye Protection:</b>	Splash goggles and/or face shield.
<b>Protective Gloves:</b>	Wear appropriate gloves to prevent skin exposure.
<b>Other Protective Clothing:</b>	Wear appropriate protective clothing to prevent skin exposure.
<b>Engineering Controls (Ventilation etc.):</b>	Use local and/or general exhaust ventilation to maintain airborne concentrations below irritating levels or airborne exposure limits, whichever is lower. Local exhaust is generally preferred because it can control the emission of the contaminant at its source, preventing dispersion of it into the general work area.
<b>Work/Hygienic/Maintenance Practices:</b>	An eye wash station should be accessible in the immediate area of use. 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. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
<b>Environmental Exposure Controls:</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.



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### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical States:</b>	[ ] Gas    [X] Liquid    [ ] Solid	
<b>Appearance and Odor:</b>	Colorless to pale yellow. amine-like.	
<b>Freeze Point/Pour Point:</b>	No data.	
<b>Boiling Point:</b>	No data.	
<b>Autoignition Pt:</b>	No data.	
<b>Flash Pt:</b>	> 200.00 F (93.3 C)    Method Used: ASTM D Closed Cup	
<b>Explosive Limits:</b>	LEL: No data.	UEL: No data.
<b>Specific Gravity (Water = 1):</b>	1.065+/-0.05	
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data.	
<b>Vapor Density (vs. Air = 1):</b>	No data.	
<b>Evaporation Rate:</b>	No data.	
<b>Solubility in Water:</b>	completely miscible	
<b>pH:</b>	10.0 - 11.0 - (neat)	
<b>Percent Volatile:</b>	No data.	

### 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Unstable [ ]    Stable [X]
<b>Conditions To Avoid - Instability:</b>	Extremes of temperature and direct sunlight. flames and sparks.
<b>Incompatibility - Materials To Avoid:</b>	Strong acids, Strong oxidizing agents, Mineral acids, Alkali metals.
<b>Hazardous Decomposition or Byproducts:</b>	Carbon monoxide, Carbon dioxide, Nitrogen oxides, Ammonia. Will occur [ ]    Will not occur [X]
<b>Possibility of Hazardous Reactions:</b>	No data available.
<b>Conditions To Avoid - Hazardous Reactions:</b>	



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### 11. TOXICOLOGICAL INFORMATION

**Toxicological Information:** The product has not been tested. Any statements on toxicology have been derived from products of a similar structure and composition.

CAS# 61791-26-2:  
Acute toxicity, LD50, Oral, Rat, 620.0 MG/KG.  
Result:  
Gastrointestinal: Nausea or vomiting.  
- Farm Chemicals Handbook., Meister Pub., 37841 Euclid Ave., Willoughby, OH 44094,  
Vol/p/yr: -, C147, 1991

Acute toxicity, LD50, Skin, Rat, > 10.00 GM/KG.  
Result:  
Skin and Appendages: Skin: After systemic exposure: Dermatitis, other.  
- Farm Chemicals Handbook., Meister Pub., 37841 Euclid Ave., Willoughby, OH 44094,  
Vol/p/yr: -, C147, 1991

CAS# 68424-85-1:  
Acute toxicity, LD50, Oral, Rat, 426.0 MG/KG.  
Result:  
Tumorigenic: Carcinogenic by RTECS criteria.  
Lungs, Thorax, or Respiration: Tumors.  
- U.S. Army, Environmental Hygiene Agency Reports., Vol/p/yr: 5177T7-66, 1967

CAS #	Ingredient(s)	NTP	IARC	ACGIH	OSHA
143239-08-1	2-Butenedioic acid (2Z)-, sodium salt (1:2), reaction products with sodium phosphonate (1:2)	n.a.	n.a.	n.a.	n.a.
61791-26-2	Fatty alkylamine, ethoxylated	n.a.	n.a.	n.a.	n.a.
68424-85-1	Alkyl(C12-C16) dimethylbenzylammonium chloride	n.a.	n.a.	n.a.	n.a.

### 12. ECOLOGICAL INFORMATION

**General Ecological Information:** This product has not been tested as a finished product. Below are the calculated values based on the ingredients within the product.  
EC50 (48h), Water Flea (daphnia magna): 0.1 - 1.0 mg/L  
EC50 (96h), Fathead Minnow (pimephales promelas): 1.0 - 10.0 mg/L

61791-26-2 fatty alkylamine, ethoxylated:  
LC50 (96 h): > 1 - 10 mg/L (rainbow trout) (OECD 203)  
EC50 (48 h): > 1 - 10 mg/L (daphnia magna) (OECD 202)  
EC50 (72 h): > 1 - 10 mg/L (Phaeodactylum tricornutum) (ISO 10253)  
NOEC: 0.05 mg/L (Phaeodactylum tricornutum) (ISO 10253)

68424-85-1 Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides:  
LC50 (96 h): 0.85 mg/L (rainbow trout) (OECD 203)  
EC50 (48 h): 0.016 mg/L (daphnia magna)  
EC50 (72 h): 0.026 mg/L (Selenastrum capricornutum) (OECD 201)

**Persistence and Degradability:** A part of the components are heavily biodegradable.  
Inorganic salts are basically not biodegradable.

**Bioaccumulative Potential:** Not expected.



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### 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method:** RCRA: It is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste (40 CFR 261.20-24).

Disposal: Whatever cannot be saved for recovery or recycling should be disposed of in accordance with local, state, and federal regulations. Consult state or local regulation for any additional handling, treatment, or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal, or recycling facility.

### 14. TRANSPORT INFORMATION

#### LAND TRANSPORT (US DOT):

**DOT Proper Shipping Name:** Amines, liquid, corrosive, n.o.s., (Alkyl dimethyl benzyl ammonium chloride, Tallow Amines)

**DOT Hazard Class:** 8 CORROSIVE

**UN/NA Number:** UN2735

**Packing Group:** III



#### LAND TRANSPORT (Canadian TDG):

**TDG Shipping Name:** Amines, liquid, corrosive, n.o.s., (Alkyl dimethyl benzyl ammonium chloride, Tallow Amines)

**UN Number:** 2735

**Packing Group:** III

**Hazard Class:** 8 - CORROSIVE

**TDG Classification:**

#### MARINE TRANSPORT (IMDG/IMO):

**IMDG/IMO Shipping Name:** Amines, liquid, corrosive, n.o.s., (Alkyl dimethyl benzyl ammonium chloride, Tallow Amine)

**UN Number:** 2735

**Packing Group:** III

**Hazard Class:** 8 - CORROSIVE

**IMDG MFAG Number:**

**IMDG EMS Page:**

#### AIR TRANSPORT (ICAO/IATA):

**ICAO/IATA Shipping Name:** Amines, liquid, corrosive, n.o.s., (Alkyl dimethyl benzyl ammonium chloride, Tallow Amine)

**UN Number:** 2735

**Packing Group:** III

**Hazard Class:** 8 - CORROSIVE

### 15. REGULATORY INFORMATION

#### EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Ingredient(s)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
143239-08-1	2-Butenedioic acid (2Z)-, sodium salt (1:2), reaction products with sodium phosphonate (1:2)	No	No	No
61791-26-2	Fatty alkylamine, ethoxylated	No	No	No
68424-85-1	Alkyl(C12-C16) dimethylbenzylammonium chloride	No	No	No



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**This material meets the EPA  
'Hazard Categories' defined  
for SARA Title III Sections  
311/312 as indicated:**

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Explosive
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Flammable (gases, aerosols, liquid, or solid)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Oxidizer (liquid, solid or gas)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Self-reactive
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Pyrophoric (liquid or solid)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Pyrophoric gas
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Self-heating
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Organic peroxide
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Corrosive to metal
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Gas under pressure (compressed gas)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	In contact with water emits flammable gas
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Combustible Dust
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	(Physical) Hazard Not Otherwise Classified (HNOC)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Acute toxicity (any route of exposure)
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Skin Corrosion or Irritation
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Serious eye damage or eye irritation
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Respiratory or Skin Sensitization
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Germ cell mutagenicity
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Carcinogenicity
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Reproductive toxicity
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Specific target organ toxicity (single or repeated exposure)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Aspiration Hazard
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Simple Asphyxiant
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	(Health) Hazard Not Otherwise Classified (HNOC)

CAS #	Ingredient(s)	Canadian NPRI	Canadian IDL	Canadian DSL
143239-08-1	2-Butenedioic acid (2Z)-, sodium salt (1:2), reaction products with sodium phosphonate (1:2)	No	No	No
61791-26-2	Fatty alkylamine, ethoxylated	No	No	Yes
68424-85-1	Alkyl(C12-C16) dimethylbenzylammonium chloride	No	No	Yes

CAS #	Ingredient(s)	Other US EPA or State Lists
143239-08-1	2-Butenedioic acid (2Z)-, sodium salt (1:2), reaction products with sodium phosphonate (1:2)	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; FIFRA: No; FDA/DEA CSA: No; CA PROP.65: No
61791-26-2	Fatty alkylamine, ethoxylated	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; FIFRA: Yes - Inert: F/NF; FDA/DEA CSA: No; CA PROP.65: No
68424-85-1	Alkyl(C12-C16) dimethylbenzylammonium chloride	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory, 4 Test; FIFRA: Yes - Active - 169135: CC, Inert: F/NF; FDA/DEA CSA: No; CA PROP.65: No

CAS #	Ingredient(s)	International Regulatory Lists
143239-08-1	2-Butenedioic acid (2Z)-, sodium salt (1:2), reaction products with sodium phosphonate (1:2)	
61791-26-2	Fatty alkylamine, ethoxylated	
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### Canadian WHMIS Classification:



CLASS E: Corrosive Materials

CLASS D, DIVISION 2: Materials Causing Other Toxic Effects

### Regulatory Information:

Canadian regulations: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

## 16. OTHER INFORMATION

### Revision Date:

07/21/2017

**Additional Information About** No data available.

### This Product:

### Company Policy or

### Disclaimer:

The information accumulated herein is believed to be accurate based on the information provided, although no guarantee or warranty, either expressed or implied is made as to the accuracy or completeness of this information, whether originating with this company or not. Recipients are advised to confirm in advance of need that the information is correct, applicable and suitable to their circumstances. The conditions or methods of handling, storage, use and disposal of the product and container are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage or use of this information or product. If the product is used as a component in another product, this information may not be applicable.