

## Product Bulletin

Product Name	<b>STEOL® CS-460</b>
Chemical Structure	$\text{CH}_3(\text{CH}_2)_{10} \text{CH}_2(\text{OCH}_2\text{CH}_2)_3 \text{OSO}_3\text{Na}$
CAS Registry Number	9004-82-4
INCI Name	Sodium Laureth Sulfate
Applications	<p>STEOL CS-460 is a biodegradable linear fatty alcohol ether sulfate. Stepan's continuous <math>\text{SO}_3</math> process minimizes salt and free alcohol content and eliminates the presence of chlorides, thus permitting a more consistent control of viscosity. It is a clear liquid of exceptionally light color and good odor. STEOL CS-460 is mild with excellent detergent and foaming properties in hard and soft water and is compatible with other anionics, nonionics, and alkaline builders.</p> <p>STEOL CS-460 is used in high foaming dishwashing detergents and many industrial cleaners. The physical properties of this surfactant suggest many other applications such as shampoos, liquid detergents, foaming agents, heavy duty alkaline cleaners, emulsifiers, textile mill kier boiling bleach assistants, and neutral and alkaline scouring. Foam stability in the presence of soap is much improved over other anionics, therefore STEOL CS-460 is recommended for cleaning products containing soap as an ingredient.</p>
Typical Properties	<p>Appearance at 25°C ..... Clear liquid</p> <p>Actives (EW 441), % ..... 59.40</p> <p>pH, 10% aqueous ..... 8.11</p> <p>Color (Klett), 5% active ..... 30</p> <p>Unsulfated Alcohol, % ..... 2.49</p> <p>Alcohol Insolubles, % ..... 0.25</p> <p>Solids, % ..... 61.2</p> <p>Viscosity at 25°C, cps ..... 200</p> <p>Viscosity at 60°C, cps ..... 15</p> <p>Cloud Point (as is), °C (°F) ..... 4 (39)</p> <p>Pour Point, °C (°F) ..... -1 (30)</p> <p>Boiling Point, °C (°F) ..... 88 (190)</p> <p>Flash Point (PMCC), °C (°F) ..... 25 (78)</p> <p>Freeze Point (as is), °C (°F) ..... -4 (25)</p> <p>Critical Micelle Concentration (CMC), mg/L ..... 74</p> <p>Density, g/mL (lbs/U.S. gal.) ..... 1.03 (8.63)</p> <p>RVOC, U.S. EPA, % (Ethanol) ..... 14</p> <p>Preservative ..... Not required</p>
Environmental Effects	Product is biodegradable. A detailed biodegradation statement is available upon request.
Health Effects	STEOL CS-460 is slightly toxic orally ( $\text{LD}_{50} > 5\text{g/kg}$ ) and causes mild skin and moderate eye irritation at 10% active.
Storage & Handling	<p><u>Standard Packaging:</u> STEOL CS-460 is available in drums and in bulk quantities.</p> <p><u>Non-Bulk Storage Recommendations:</u> It is recommended that STEOL CS-460 be stored in sealed containers kept in a well-ventilated area away from sparks, fire, and open flame. Avoid overheating or freezing. Equipment should be grounded when transferring or using material.</p> <p><u>Bulk Storage Recommendations:</u> STEOL CS-460 should be stored in vessels of 316 stainless steel or fiberglass with an</p>



## Workplace Exposure

Atlac 382 corrosion liner, atmospheric storage with a flame arrestor, and electrically grounded fittings are recommended. Material should be stored between 26-32°C (80-90°F). Pumps, pipes and transfer lines should be 316 stainless steel.

Normal safety precautions (i.e., gloves and safety goggles) should be employed when handling STEOL CS-460. Contact with eyes, nose or prolonged contact with skin should be avoided. Wash thoroughly after handling STEOL CS-460.

## Clearances

Occupational exposure can occur primarily through skin contact or via inhalation of vapors and mists. Engineering controls, personal protective equipment, and other workplace practices should be used to control these exposures.

The international inventories (country clearances) for STEOL CS-460 can be found in Section 15 of the Safety Data Sheet (SDS). **It is the responsibility of the formulator to review the chemical control regulations for each country where the end product is intended to be sold or used.** If you have any further questions regarding inventories, please contact North America Technical Service at [techserv@stepan.com](mailto:techserv@stepan.com).

STEOL CS-460 is USDA authorized and available as Kosher Certified.

## Product Stewardship

This product bulletin has been written in accordance with ACC's Product Stewardship guidelines.

## Additional Safety Information

A Safety Data Sheet is available upon request.



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