

## Product Bulletin

Product Name	<b>STEOL<sup>®</sup> CS-230</b>																																				
Chemical Structure	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>10</sub> CH <sub>2</sub> (OCH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> OSO <sub>3</sub> Na																																				
CAS Registry Number	68585-34-2																																				
INCI Name	Sodium Laureth Sulfate																																				
Applications	<p>STEOL CS-230 is a sodium lauryl ether sulfate derived from fatty alcohols, ethoxylated to an average of two moles, and sulfated via Stepan's continuous SO<sub>3</sub> process. The consistent, high purity product made possible by this continuous sulfation process will afford excellent reproducibility in STEOL CS-230 based formulas.</p> <p>STEOL CS-230 provides improved mildness over sodium lauryl sulfate without sacrificing critical performance attributes, such as foaming and viscosity response. Its low irritation properties allow it to be used for mild cleansing products, as well as, baby products.</p> <p>STEOL CS-230 can be formulated into shampoos, bath products, and hand soaps, offering the required physical properties and performance attributes.</p> <p>Products based on STEOL CS-230 can be thickened with salts, betaines, or amides, with the latter two also serving to enrich the foam. A variety of performance and physical attributes can be obtained simply by adjusting the amount of additive incorporated into a formula. Since STEOL CS-230 is compatible with commonly used opacifying and pearling agents, the formulator is afforded flexibility in developing the desired product appearance.</p>																																				
Typical Properties	<table><tr><td>Appearance at 25°C.....</td><td>Clear liquid</td><td>Viscosity, cps at 25°C.....</td><td>373</td></tr><tr><td>Actives (MW 382), % .....</td><td>25.5</td><td>Viscosity, cps at 60°C.....</td><td>52</td></tr><tr><td>Unsulfated Alcohol, %.....</td><td>0.9</td><td>Freeze Point, °C (°F) .....</td><td>-2 (28)</td></tr><tr><td>Sodium Chloride, % .....</td><td>0.03</td><td>Pour Point, °C (°F).....</td><td>1 (34)</td></tr><tr><td>Sodium Sulfate, % .....</td><td>0.2</td><td>Flash Point (PMCC), °C (°F).....</td><td>&gt;94 (&gt;201)</td></tr><tr><td>pH, 10% aqueous .....</td><td>7.5</td><td>Density, g/ml (lbs/U.S. gal.) .....</td><td>1.04 (8.7)</td></tr><tr><td>Color (%T at 420 nm), as is .....</td><td>95</td><td>RVOC, U.S. EPA, %.....</td><td>0</td></tr><tr><td>Cloud Point (as is), °C (°F).....</td><td>5 (41)</td><td>Critical Micelle Concentration, mg/L .....</td><td>119</td></tr><tr><td>Preservative .....</td><td>Formaldehyde</td><td></td><td></td></tr></table>	Appearance at 25°C.....	Clear liquid	Viscosity, cps at 25°C.....	373	Actives (MW 382), % .....	25.5	Viscosity, cps at 60°C.....	52	Unsulfated Alcohol, %.....	0.9	Freeze Point, °C (°F) .....	-2 (28)	Sodium Chloride, % .....	0.03	Pour Point, °C (°F).....	1 (34)	Sodium Sulfate, % .....	0.2	Flash Point (PMCC), °C (°F).....	>94 (>201)	pH, 10% aqueous .....	7.5	Density, g/ml (lbs/U.S. gal.) .....	1.04 (8.7)	Color (%T at 420 nm), as is .....	95	RVOC, U.S. EPA, %.....	0	Cloud Point (as is), °C (°F).....	5 (41)	Critical Micelle Concentration, mg/L .....	119	Preservative .....	Formaldehyde		
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Biodegradability	Product is readily biodegradable. A detailed biodegradability statement is available upon request.																																				
Toxicity	STEOL CS-230 is practically non-toxic orally (LD <sub>50</sub> is >5 g/kg) and causes mild to moderate skin and moderate eye irritation at 10% active.																																				
Storage & Handling	<p>Normal safety precautions (i.e. gloves and safety goggles) should be employed when handling STEOL CS-230. Contact with the eyes and prolonged contact with the skin should be avoided. Wash thoroughly after handling material.</p> <p>It is recommended that STEOL CS-230 be stored in a sealed container and kept at temperatures above 45°F (7°C). Avoid overheating or freezing. If material is frozen, mild heat and agitation are recommended to ensure the material is homogeneous before use.</p>																																				

STEOL<sup>®</sup> is a registered trademark of the Stepan Company.



Storage & Handling

Bulk Storage Information: Tanks made of 316 stainless steel or fiberglass with an Atlac 382 corrosion liner are recommended. Positive displacement gear pumps and piping should be 316 stainless steel. Recommended storage for bulk tanks is 90-100°F (32-38°C).

Standard Packaging: STEOL CS-230 is available in bulk and 55 gallon drums (net weight 450 lb/204 kg).

Clearances

All components of STEOL CS-230 are listed in the following countries; the registration numbers for the active ingredients are included in parentheses: Japan (ENCS 7-155), Canada (DSL listed), Australia (AICS listed), Europe (EINECS 221-416-0) and United States (TSCA listed).

STEOL CS-230 is available as Kosher Certified.

Additional Safety Information

A Material Safety Data Sheet is available upon request.

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