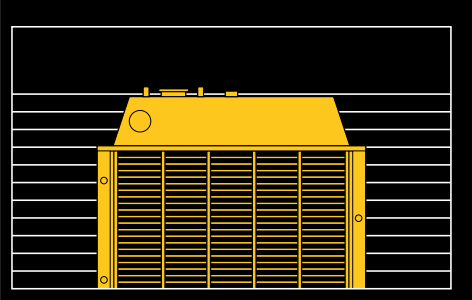


# Diesel Engine Antifreeze/Coolant (DEAC™)

For all Caterpillar® diesel and spark ignited engines, and most OEM diesel, gasoline, and natural gas engines



Cat® Diesel Engine Antifreeze/Coolant (DEAC™) is a heavy-duty cooling system fluid designed to provide superior protection against freezing, pitting and corrosion in diesel and natural gas engines. It is an alkaline type, single phase ethylene glycol-based fluid containing both organic and inorganic agents in its corrosion-inhibiting and antifoam additives. DEAC is a concentrate requiring thorough mixing with an equal amount of water for freeze protection down to -34°F (-37°C). The addition of Supplemental Coolant Additives (SCA) is not required upon initial fill. SCA should be added at each engine oil change.

## Recommended use

Cat DEAC can be used in all Cat diesel and spark ignited engines, and most OEM diesel, gasoline and natural gas engines. It meets ASTM D4985, ASTM 5345 and ASTM 6218 standards for heavy-duty antifreeze/coolants, and ASTM D3306 and ASTM D4656 for automotive applications. DEAC also meets glassware corrosion test ASTM D1384.

Caterpillar recommends the use of distilled or deionized water for mixing with DEAC. If tap water is used it should meet the standards listed on the following page to reduce the potential for chemicals not dissolving or precipitating out of solution. It is important that DEAC be thoroughly mixed with water in a clean container before it is poured into the cooling system.

Supplemental Coolant Additive (SCA) liquid or an SCA spin-on element assembly should be used at each engine oil change interval. Use a Caterpillar 8T5296 Test Kit to determine the amount of SCA liquid required.

We can help you determine the right coolant for your Cat machines and engines, or you can refer to your "Operations and Maintenance Manual" or Service Publications SEBU6250 (Caterpillar Machines), SEBU6251 (Caterpillar Commercial Engines), or SEBU6385 (Caterpillar On-Highway Trucks). An electronic version of this service publication is also available at [www.CAT.com](http://www.CAT.com) by selecting: Products / Parts and Service / Fluids / Machine Lubricant Recommendations.

## Typical Characteristics\*

Appearance		Magenta
Specific gravity (concentrate), 15.5/15.5°C	ASTM D1122	1.122
Specific gravity (50% solution), 15.5/15.5°C	ASTM D1122	1.075
pH (concentrate)	ASTM D1287	11.3
pH (50% solution)	ASTM D1287	10.0
Reserve alkalinity (50% solution)	ASTM D1121	5.5
Equilibrium boiling point (50% solution)	ASTM D1120	109°C
Boiling protection, °F (°C) 15 psi pressure cap	ASTM D1177	
50% DEAC/50% water		265 (129)
60% DEAC/40% water		270 (132)
Freezing protection, °F (°C)		
50% DEAC/50% water		-34 (-37)
60% DEAC/40% water		-65 (-54)
Ash content	ASTM D1119	.60%
Silicate (concentrate) SiO <sub>2</sub>		1197 ppm
Commercial Grade Ethylene Glycol (% Volume)		95.2%
Ethylene Glycol (% Weight)		90.7% min.
Other Glycols (% Weight)		5.0% max.
Inhibitor Additives (%Volume)		4.3-4.8%

\* The values shown are typical values and should not be used as quality control parameters either to accept or reject product. Specifications are subject to change without notice.

**Proper use for optimum results**

**Water quality for use as coolant**

DEAC is sold as a concentrate and requires water dilution before using. Caterpillar recommends deionized or distilled water to maximize the benefit of the various inhibitors in DEAC and to reduce the potential for chemical incompatibility within the cooling system.

- Never use salt water or water from a stream or pond
- Select the best quality water available
- Have the water tested by a laboratory
- NEVER USE WATER ALONE AS COOLANT

To prevent poor quality water from entering the cooling system, deionized or distilled water should be used to mix with the DEAC Concentrate or when adding water during maintenance. If deionized or distilled water is not available, tap water that meets the following specifications should be used:

Minimum acceptable water characteristics		
Chlorides	ASTM D512b	Less than 40 ppm
Sulfates	ASTM D516a	Less than 100 ppm
Hardness (Calcium/Magnesium)	ASTM D1126b	Less than 170 ppm
Total Solids	ASTM D1888a	Less than 340 ppm
pH	ASTM D1293	5.5 to 9.0

**Mixing DEAC concentrate and water**

Cooling system problems can also be caused by improper dilution of the coolant/antifreeze concentrate with water. These problems include:

- Improper ratio of concentrate to water
- Not stirring thoroughly to mix the water and concentrate
- Mixing the concentrate and water in a dirty container
- Pouring the concentrate and water into the radiator without first mixing them

**Coolant servicing**

- Use the correct amount of Caterpillar SCA at each oil change interval, or when testing indicates a need
- Use either Cat liquid SCA or spin-on elements
- Check the coolant for SCA concentrate level (use Cat Coolant Conditioner Test Kit 8T5296)
- Check the coolant pH at each oil change interval; if it is not between 8.5 and 10.5 find the cause and correct
- Thoroughly flush and refill the cooling system every 3,000 hours or 150,000 miles (240,000 kilometers)

**Cat DEAC, SCA & Spin-on Cartridge ordering information**

**DEAC Concentrate**

Part No.	Package Size
156-2649	Bulk (2,000 to 6,000 Gallons)
8C3686	55 Gallon Drum (208 Litres)
8C3684	1 Gallon (3.78 Litres)

**SCA Liquid**

Part No.	Package Size
5P2907	55 Gallon Drum (208 Litres)
8C3680	5 Gallons (18.95 Litres)
3P2044	1 Quart (.95 Litre)
8T1589	1 Pint (.47 Litre)
111-2372	12 oz. (.35 Litre)

**SCA Spin-on Cartridge**

Part No.	Part No.	
9N3717	1W5518	Cartridge selection is based on type of fill (initial or maintenance) and system capacity. Please refer to your "Operations and Maintenance Manual" for specific information.
9N3718	9N3366	
111-2371	9N3367	
9N3368	9N6123	
111-2369	111-2373	
111-2370	112-0926	

**S-O-S<sup>SM</sup> Services for early detection**

Protect your investment with S-O-S Services, the ultimate detection and diagnostic tool for your equipment. We recommend S-O-S Coolant Analysis at least annually on all your Caterpillar equipment.

**Proper use for health and safety**

According to toxicology information, Cat DEAC has little or no adverse effects if handled and used properly. No special precautions are suggested beyond attending to good personal hygiene and avoiding prolonged, repeated skin contact.

However, this product contains ethylene glycol, which is poisonous. Do not swallow, and keep out of the reach of children and animals. For more information, refer to the Material Safety Data Sheet on the Caterpillar website: [www.catmsds.com](http://www.catmsds.com)