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Standard Terminology for Engine Coolants[1]

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antifoam, *n*—a substance added to engine coolant concentrate, corrosion inhibitor packages, or supplemental coolant additives to prevent or suppress foam.

DISCUSSION—Eliminating foam improves heat transfer.

antifreeze, *n*—a term frequently used in the marketplace for engine coolant concentrate. (See **engine coolant concentrate**.)

ash content, *n*—the residue from an engine coolant concentrate, antirust, or engine coolant that remains after evaporation, charring, and ignition at strong heat.

boiling point, *n*—the temperature at which the vapor pressure of an engine coolant reaches atmospheric pressure under equilibrium boiling conditions.

cavitation corrosion, *n*—a form of localized, accelerated corrosion characterized by deep pitting and caused by high mechanical forces resulting from coolant vapor bubble collapse at the surface of the metal.

cavitation erosion corrosion, *n*—the mechanical removal of protective films on metal by the formation and collapse of vapor bubbles in a liquid,and the abrasive action of a liquid, which may contain suspended solids, moving at high velocity.

DISCUSSION—The mechanical removal of the protective films exposes fresh metal to corrosive attack.

coolant additive package, *n*—the combination of inhibitors added to an engine coolant to mitigate cooling system degradation, corrosion, scaling, and foaming, or to provide other desirable properties.

corrosion inhibitor package, *n*—the combination of inhibitors added to an engine coolant to mitigate cooling system corrosion.

corrosive water, *n*—a standard solution containing 100 ppm each of sulfate, chloride, and bicarbonate ions introduced as the sodium salts to distilled water.

dye, *n*—a colorant added to an engine coolant to give it a distinctive color.

engine coolant, *n*—a heat exchange fluid designed to transfer heat from the engine block and accessories to the air through the radiator, consisting of water plus a corrosion inhibitor package, or a blend of water and glycol engine coolant concentrate.

DISCUSSION—Engine coolants may also contain supplemental coolant additives.

engine coolant concentrate, *n*—a formulated liquid product intended to be diluted with water for use in engine cooling systems.

DISCUSSION—Functionally, the product provides a lower freeze point and mitigates corrosion and foaming.

engine dynamometer test, *n*—a laboratory full-scale engine test designed to evaluate corrosion protection and inhibitor stability of engine coolants under simulated operational conditions.

erosion corrosion, *n*—nonuniform, accelerated corrosion characterized by a smooth appearance and caused by high-velocity coolant.

DISCUSSION—The corrosive attack may be aggravated by suspended solids.

extended life coolant, *n*—an engine coolant for light-duty service vehicles with recommended change-out of the coolant after 160 000 km (100 000 miles), 5 years, or 4000 operating hours.

foaming tendencies, *n*—a laboratory test conducted in glassware to evaluate the tendency of an engine coolant to foam under standard conditions of aeration and temperature.

freezing point, *n*—the temperature at which ice crystals begin to form in an engine coolant when tested in accordance with Test Method D 1177 for Freezing Point of Aqueous Engine Coolant Solution.[2]

glassware corrosion test, *n*—a laboratory screening test for evaluating the corrosion protection properties of engine coolants on metal test specimens under controlled conditions of aeration and temperature.

glycol engine coolant concentrate, *n*— an engine coolant concentrate in which the freeze point depressant is ethylene or propylene glycol, with inhibitors to minimize foaming and corrosion.

DISCUSSION—Small amounts of other glycols may be present.

[1] This terminology is under the jurisdiction of ASTM Committee D-15 on Engine Coolants and is the direct responsibility of Subcommittee D15.92 on Terminology.
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[2] *Annual Book of ASTM Standards*, Vol 15.05.