SUBCHAPTER 09F - INTERNAL COMBUSTION ENGINE ANTIFREEZES

SECTION .0100 - SPECIFICATIONS FOR ETHYLENE GLYCOL BASE ENGINE COOLANTS

02 NCAC 09F .0101 GENERAL

(a) Ethylene glycol base engine coolant concentrate, when used at 40 to 70 percent concentration in water, functions effectively during both winter and summer in automotive vehicle cooling systems to provide protection against freezing, boiling and corrosion.

(b) Ethylene glycol base engine coolant concentrate shall consist of ethylene glycol and shall contain corrosion inhibitors, a foam suppressor, and sufficient water to dissolve the additives and to provide a packaged product that can be poured at temperatures as low as zero degrees Fahrenheit (-17.8 degrees C). Other glycols such as propylene and diethylene may be included up to a maximum of 15 percent if the chemical and physical properties referenced in Rules .0102 and .0103 of this Section are met.

(c) The product when installed in accordance with the vehicle manufacturers' recommendations and those on the product label shall not adversely affect fluid flow and heat transferred where used in a properly maintained cooling system in normal passenger car service, as defined in the vehicle owner's manual, for a minimum of one year.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1976;
Amended Eff. May 1, 2013;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0102 PHYSICAL AND CHEMICAL REQUIREMENTS

Ethylene glycol base engine coolant concentrate shall conform to the physical and chemical property requirements prescribed by "ASTM International Standards on Engine Coolants" for ethylene glycol base engine coolant concentrate, as set forth in 02 NCAC 09B .0116.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1976;
Amended Eff. May 1, 2013;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0103 PERFORMANCE REQUIREMENTS

Ethylene glycol base engine coolant concentrate shall conform to the laboratory test performance requirements prescribed by "ASTM International Standards on Engine Coolants" for ethylene glycol base engine coolant.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1976;
Amended Eff. May 1, 2013;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

SECTION .0200 - SPECIFICATIONS FOR ALCOHOL BASE ENGINE COOLANTS

02 NCAC 09F .0201 GENERAL

Alcohol base engine coolant concentrate shall consist of at least 50 percent methyl alcohol. Other alcohols such as ethyl and isopropyl may be included if the chemical and physical properties conform to the "ASTM International Standards on Engine Coolants" for alcohol base coolant.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1976;
Amended Eff. May 1, 2013;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0202 PHYSICAL AND CHEMICAL REQUIREMENTS

Alcohol base engine coolant concentrate shall conform to the physical and chemical property requirements prescribed by "ASTM International Standards on Engine Coolants" for alcohol base engine coolant.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1976;
Amended Eff. May 1, 2013;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0203 PERFORMANCE REQUIREMENTS

Alcohol base engine coolant concentrate shall conform to the laboratory test performance requirements prescribed by "ASTM International Standards on Engine Coolants" for alcohol base engine concentrate.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1976;
Amended Eff. May 1, 2013;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0204 METHODS OF TESTING

The methods of testing to be used in determining fidelity of ethylene glycol and alcohol base engine coolant products to the physical, chemical and performance requirements are those set forth in the "ASTM International Standards on Engine Coolants."

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1976;
Amended Eff. May 1, 2013;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

SECTION .0300 - SPECIFICATIONS FOR METHOXY PROPANOL BASE ENGINE COOLANTS

02 NCAC 09F .0301 DEFINITIONS

(a) "Methoxy propanol base engine coolant concentrate" means a methoxy propanol base engine coolant used at a concentration level of 33 1/3 percent to 60 percent in water.
(b) "Methoxy propanol base engine coolant full-fill mixture" means a methoxy propanol base engine coolant that is used as provided by the manufacturer, with no addition of water by the consumer.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1982;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0302 GENERAL SPECIFICATIONS

All methoxy propanol base engine coolants, when installed in accordance with the vehicle manufacturer's recommendations and those on the product label, shall function effectively in a properly maintained cooling system in heavy equipment, trucks or buses:

(1) with or without diesel engines;
(2) under normal service;
(3) during both winter and summer;
(4) for a minimum of one year without adversely affecting fluid flow and heat transfer; and
(5) providing protection against freezing, boiling and corrosion in accordance with all other specifications of 02 NCAC 09F .0300.

History Note: *Authority G.S. 106-579.7; 106-579.14;*

Eff. February 1, 1982;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0303 CONCENTRATES

(a) Methoxy propanol base engine coolant concentrate shall consist of:

(1) essentially 1-methoxy, 2-propanol;
(2) suitable inhibitors;
(3) a foam suppressor; and
(4) sufficient water to dissolve the additives and provide a packaged product that can be poured at temperatures as low as 0 degrees F. (-17.8 degrees C.).

(b) Methoxy propanol base engine coolant concentrate may include other glycols such as alkalene and polyalkalene up to a maximum of 15 percent of the total glycol content so long as the chemical and physical properties in 02 NCAC 09F .0305 and 02 NCAC 09F .0306 are met, as applicable.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1982;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0304 FULL-FILL

(a) Methoxy propanol base engine coolant full-fill mixture may contain a maximum of 50 percent deionized or distilled water.

(b) A person shall market methoxy propanol base engine coolant full-fill mixture in containers of no less than five gallons capacity.

(c) A person shall market methoxy propanol base engine coolant full-fill mixtures only in retail outlets engaged in marketing equipment utilizing diesel engines, diesel engine sales, diesel engine parts supply or service facilities, or similar heavy equipment establishments.

History Note: *Authority G.S. 106-579.7; 106-579.14;*
Eff. February 1, 1982;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0305 PHYSICAL AND CHEMICAL REQUIREMENTS

Methoxy propanol base engine coolant concentrate and full-fill mixtures shall conform to the physical and chemical properties prescribed by "ASTM International Standards on Engine Coolants" for methoxy propanol base engine coolant concentrate and full-fill mixtures.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1982;
Amended Eff. May 1, 2013;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.

02 NCAC 09F .0306 PERFORMANCE REQUIREMENTS

Methoxy propanol base engine coolant concentrate and full-fill mixtures shall conform to the laboratory test performance requirements prescribed by "ASTM International Standards on Engine Coolants" for methoxy propanol base engine coolant concentrate and full-fill mixtures.

History Note: *Authority G.S. 106-579.7;*
Eff. February 1, 1982;
Amended Eff. May 1, 2013;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 22, 2015.