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AMSOIL Regulatory Compliance

DATA SHEET

# DOMINATOR® Coolant Boost

## Provides Effective Heat Transfer and Enhanced Corrosion Protection




Racers demand lower engine operating temperatures to achieve maximum efficiency and horsepower on the track. Many racers use straight water as a coolant, which invites damaging radiator and water-pump corrosion. AMSOIL DOMINATOR Coolant Boost provides racers and motorists significantly lower engine operating temperatures, quicker warm-up times and advanced corrosion protection.

DOMINATOR Coolant Boost is formulated with proprietary tiered-surfactant technology, providing quick and effective heat transfer inside radiators and cylinder heads and resulting in reduced operating temperatures, more efficient operation, increased horsepower and significantly reduced engine warm-up times in cold weather and before a race. Coolant Boost also contains a robust mixture of corrosion inhibitors that protect the radiator, heater core, water pump, cylinder heads, engine block and intake manifold from the damaging effects of corrosion.

- **Reduces** engine temps up to 25°F (13.8°C)
- **Helps** vehicles warm-up an average of 54% faster

### Engine Warm-up Reduction Test

To test DOMINATOR Coolant Boost's ability to reduce engine warm-up times, the product was added to an antifreeze/water mixture in a V-8 test engine. The engine was run at idle until it reached a prescribed temperature of either 120°F (48.9°C) or 180°F (82.2°C). Ambient temperature was maintained at 30°F (-1°C) to simulate winter conditions. DOMINATOR Coolant Boost improved warm-up times, which helps motorists defrost the windshield and warm the cabin sooner on cold days.

| ***Engine Warm-up Time Reduction*** | **30˚F TO 120˚F (49°C TO 82°C)** | **30˚F TO 180˚F (49°C TO 82°C)** |
|---|---|---|
| Warm-up with 50/50 Antifreeze/Water Only | 6.3 Min. | 11.4 Min. |
| Warm-up with Coolant Boost Added | 3.2 Min. | 5.3 Min. |

### Temperature Reduction Dynamometer Test

To test temperature-reduction capabilities, controlled engine dynamometer (dyno) tests were performed on a 350 cubic inch Chevy* engine with an aluminum block and cylinder heads. In each phase of testing, the engine was operated at 4,500 rpm until coolant temperature stabilized. As benchmarks for the test, straight water stabilized at 220˚F (104.4°C) and a 50/50 antifreeze/water mixture stabilized at 228˚F (108.9°C). Reducing engine temperatures helps racers retain power and cool the engine in extreme conditions.

| ***Temperature Reduction*** | **DOMINATOR COOLANT BOOST** |
|---|---|
| Mixed with 50/50 Antifreeze/Water | 8˚F (4.5°C) reduction |
| Mixed with Straight Water | 25˚F (13.8°C) reduction |

### Cast Aluminum Alloys Corrosion Test

The Cast Aluminum Alloys Corrosion Test (ASTM D4340) measures corrosion protection properties in modern automobile and high-performance race engines with aluminum cylinder heads. A cast aluminum puck was heated to 275˚F (135°C) at 28 PSI and exposed to the test coolant mixture for one week. Weight loss of less than 1.0 mg is required to pass the test. Reducing corrosion helps maximize engine and cooling-system life in racing and passenger vehicles.

| ***ASTM D4340*** | **DOMINATOR COOLANT BOOST (in straight water)** | **WATER ONLY** |
|---|---|---|
| Weight loss in mg (1.00 max) | 0.06 | 3.97 |

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## Corrosion Test in Glassware

In the Corrosion Test in Glassware (ASTM D1384), six metal coupons constructed of the most common metals in automotive cooling systems were totally immersed in aerated coolant mixtures for 336 hours at 190˚F (87.8°C). Each test was performed three times to determine the average weight change for each metal. The ASTM sets the allowable weight loss maximums for each metal.

***ASTM D1384***

| | ALLOWABLE | DOMINATOR COOLANT BOOST (in straight water) | WATER ONLY |
|---|---|---|---|
| Copper weight loss (mg) | 10 max | 1 | 25 |
| Solder weight loss (mg) | 30 max | 0 | 62 |
| Brass weight loss (mg) | 10 max | 0 | 23 |
| Steel weight loss (mg) | 10 max | 1 | 18 |
| Cast iron weight loss (mg) | 10 max | 0 | 29 |
| Cast aluminum weight loss (mg) | 30 max | 0 | 91 |

## Simulated Service Corrosion Test

In the Simulated Service Corrosion Test (ASTM D2570), six metal coupons constructed of the most common metals in automotive cooling systems were exposed to ASTM corrosive water designed to simulate hard and corrosive water in degraded coolant for 1,064 hours at 190°F (87.8°C). Coolant was maintained at a temperature and flow rate equivalent to the operating conditions seen in most passenger vehicles. Corrosive weight loss suffered during the test determines the additive's corrosion protection properties. The ASTM sets the allowable weight loss maximums for each metal.

***ASTM D2570***

| | ALLOWABLE | DOMINATOR COOLANT BOOST (in straight water) | WATER ONLY |
|---|---|---|---|
| Copper weight loss (mg) | 20 max | 3 | 66 |
| Solder weight loss (mg) | 60 max | 0 | 120 |
| Brass weight loss (mg) | 20 max | 2 | 59 |
| Steel weight loss (mg) | 20 max | 0 | 54 |
| Cast iron weight loss (mg) | 20 max | 0 | 117 |
| Cast aluminum weight loss (mg) | 60 max | 0 | 89 |

## Applications

Use DOMINATOR® Coolant Boost in racing applications using straight water as coolant and automotive applications using antifreeze mixtures.

**Directions:** With engine off and cool, make sure cooling system is filled with selected coolant. Shake bottle and pour calculated amount of Coolant Boost into radiator. Start engine, turn heat on high and run for 15 minutes.

**Dosage:** For straight-water applications, add 2 fl. oz. of Coolant Boost per quart of system capacity. In antifreeze mixtures, add 1 fl. oz. of Coolant Boost per quart of system of capacity.

**Frequency:** In applications using Coolant Boost with straight water, drain and re-fill the coolant system and add Coolant Boost once per year.

In applications using Coolant Boost with antifreeze/water mixtures, add Coolant Boost once per year or every 30,000 miles (48,280 km), whichever comes first. Follow coolant manufacturer recommendations for coolant change intervals.

## AMSOIL PRODUCT WARRANTY

AMSOIL products are backed by a Limited Liability Warranty. For complete information visit AMSOIL.com/warranty.aspx.

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