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DATA SHEET

PROTECTION *you demand.* | PERFORMANCE *you deserve.™*

# DOMINATOR® Coolant Boost

## Enhanced Heat Transfer and Corrosion Protection




Performance enthusiasts are constantly seeking ways to reduce engine operating temperatures, which increases horsepower, peak performance and engine reliability, especially in competition. Many racers use straight water as a coolant, which can lead to damaging corrosion in the radiator, water-pump and other cooling system components.

AMSOIL Dominator Coolant Boost is formulated with proprietary tiered-surfactant technology that provides quick and effective heat transfer inside radiators and cylinder heads, resulting in significantly reduced engine warm-up times, lower engine operating temperatures and increased engine efficiency and horsepower. It 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 (14°C).
- **Helps** vehicles warm-up an average of 54% faster.

### Engine Warm-up Test

Warm-up time is how fast the engine reaches operating temperature. Faster warm-up times enable motorists to defrost the windshield and warm the cabin quickly on cold days. In this test, the ambient temperature was maintained at 30ºF (-1°C) to simulate winter conditions. AMSOIL DOMINATOR Coolant Boost was added to a 50/50 antifreeze/water mixture in a V8 test engine and the engine was run at idle from ambient temperature until it reached temperatures of 120ºF (49°C) and 180ºF (82°C).

| ***Engine Warm-up Time*** | **30˚F TO 120˚F (-1°C TO 49°C)** | **30˚F TO 180˚F (-1°C TO 82°C)** |
|---|---|---|
| Warm-up with only 50/50 Antifreeze/Water | 6.3 min. | 11.4 min. |
| Warm-up with AMSOIL DOMINATOR Coolant Boost | 3.2 min. | 5.3 min. |

### Temperature Reduction Test

Reducing maximum engine temperatures in extreme conditions helps maintain peak power and protect internal components. In this test, controlled dynamometer (dyno) tests were performed on a 350 cubic inch Chevy* engine with an aluminum block and cylinder heads. The engine was operated at 4,500 rpm until coolant temperature stabilized. In benchmark tests, 50/50 antifreeze/water stabilized at 228˚F (108.9°C) and straight water stabilized at 220˚F (104.4°C).

| ***Temperature Reduction*** | **STABILIZED TEMPERATURE** |
|---|---|
| 50/50 Antifreeze/Water with AMSOIL DOMINATOR Coolant Boost | 220˚F = 8˚F (4.5°C) lower |
| Straight Water with AMSOIL DOMINATOR Coolant Boost | 195˚F = 25˚F (14°C) lower |

### Aluminum Alloy Corrosion Test

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

| **WEIGHT LOSS (mg)** | **DOMINATOR COOLANT BOOST (in straight water)** | **WATER ONLY** |
|---|---|---|
| Cast Aluminum | 0.06 | 3.97 |

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## Automotive Metals Corrosion Test

In the Corrosion Test in Glassware (ASTM D1384), six metal coupons representing 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. ASTM sets maximum allowable weight loss limits for each metal.

| WEIGHT LOSS (mg) | ASTM ALLOWED | DOMINATOR COOLANT BOOST (in straight water) | WATER ONLY |
|---|---|---|---|
| Copper | 10 max | 1 | 25 |
| Solder | 30 max | 0 | 62 |
| Brass | 10 max | 0 | 23 |
| Steel | 10 max | 1 | 18 |
| Cast Iron | 10 max | 0 | 29 |
| Cast Aluminum | 30 max | 0 | 91 |

## Simulated Service Corrosion Test

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

| WEIGHT LOSS (mg) | ASTM ALLOWED | DOMINATOR COOLANT BOOST (in straight water) | WATER ONLY |
|---|---|---|---|
| Copper | 20 max | 3 | 66 |
| Solder | 60 max | 0 | 120 |
| Brass | 20 max | 2 | 59 |
| Steel | 20 max | 0 | 54 |
| Cast Iron | 20 max | 0 | 117 |
| Cast Aluminum | 60 max | 0 | 89 |

## Applications

Use AMSOIL 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 capacity.

**Frequency:** In applications using Coolant Boost with straight water, drain and refill 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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