

# VOLVO PENTA

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## Service Bulletin

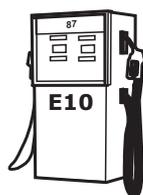
Group	Number	Version
18-8	7	02

## Ethanol Blended Gasoline Gas Engines

Distribution: M

Date: 09-2009

Binder: C



### Ethanol Blended Gasoline (E10)

Gasoline is distributed throughout the world that contains ethanol. Volvo Penta gasoline engines may be operated using gasoline blended with a maximum of 10% ethanol and that meets the minimum octane specification (see operator's manual). Gasoline blended with 10% ethanol is referred to as E10.



Do not use ethanol blends greater than 10%, especially E85 (85% ethanol, flex fuel). Volvo Penta engines are not designed to run on high percentages of ethanol. Loss of performance, increased fuel consumption and decreased mileage/range will occur.

**NOTICE!** Engine damage may occur; damage caused by fuel with too much ethanol is not covered by warranty.

Ethanol has several characteristics that can create problems in marine fuel systems. It acts as a solvent and it attracts and holds water, in a much higher percentage than earlier fuels.

**NOTICE!** Fuel system or engine damage caused by contamination from water, varnish, foreign particles, sludge, or gums entering or forming in the fuel system is not covered by the warranty.

Water, varnish, foreign particles, sludge, and gums are created or freed by the ethanol and can enter or form in the fuel system. These contaminants can clog fuel filters and damage fuel system components: pumps, injectors, carburetors. The contaminants must be prevented from entering the engine's fuel system.

### Recommendations for E10 fuel

#### 1. Add a second water separating fuel filter between the fuel tank and the engine.

Volvo Penta gasoline engines (except 3.0GL) are equipped with a water separating fuel filter. A second filter adds extra protection from water and contaminants in the gasoline.

The filter must be approved for gasoline inboard applications (USCG, EU 94/25/EC) and installed in accordance with boat building standards (ABYC, EU 94/25/EC). The filter must have a minimum rating of 50 gallons (189L) per hour.

**2. Water separating fuel filters should be checked frequently for water and contaminants** in accordance with the filter manufacturer's recommendations. Check and/or replace the filters if engine performance is poor. Encourage boat owners to carry spare filters and needed tools and supplies to change filters.

**3. Use a fuel stabilizer such as STA-BIL®**, if the vessel's fuel will not be used within 30 days. Marine fuel stabilizer provides the best results. Add the stabilizer according to the stabilizer manufacturer's instructions. This will help prevent the formation of fuel contaminants.

**NOTICE!** If the boat will not be used for two months or longer, the fuel system must be properly prepared for this storage period. See service bulletin 23-0-2, version 04 for details on storage procedures and use of fuel stabilizer.

### Fuel Testing

The mixing of ethanol and gasoline at the distributor can be inaccurate. At delivery, test gasoline for ethanol level to insure it is 10% or below. Also consider testing the fuel in boats with complaints of poor performance and that show symptoms of

poor fuel quality. Inexpensive test kits can be purchased locally or found on the internet.

### **Fuel Additives**

Avoid any fuel additives and fuel system treatments that contain ethanol or are alcohol-based.

### **Fiberglass Fuel Tanks**

 **WARNING! Fuel leak, explosion/fire may result from continued use of ethanol fuels in polyester resin fiberglass fuel tanks.**

Some older boats (mid-80's and earlier) may have polyester resin fiberglass fuel tanks. Ethanol, as a solvent can **dissolve the resin in the**

**tank walls.** The result is formation of sludge and gum in the fuel that can clog fuel filters and damage fuel system components. Volvo Penta does not recommend the use of ethanol blended fuels in fuel tanks constructed of polyester resin fiberglass.

### **Methanol**

Do not use any gasoline containing methanol in Volvo Penta engines. Serious engine damage may result from the continued use of fuel containing methanol. Any resulting engine damage is not covered by the warranty.

**The next page may be posted and made available to Volvo Penta engine users to provide them with information regarding ethanol blended fuels.**

# VOLVO PENTA

## Ethanol Blended Gasoline and your Volvo Penta engine



### Ethanol Blended Gasoline (E10)

Gasoline is distributed throughout the world that contains ethanol. Volvo Penta gasoline engines may be operated using gasoline blended with a maximum of 10% ethanol and that meets the minimum octane specification (see operator's manual). Gasoline blended with 10% ethanol is referred to as E10.



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**NOTICE!** Engine damage may occur; damage caused by fuel with too much ethanol is not covered by warranty.

Ethanol has several characteristics that can create problems in marine fuel systems. It acts as a solvent and it attracts and holds water, in a much higher percentage than earlier fuels.

**NOTICE!** Fuel system or engine damage caused by contamination from water, varnish, foreign particles, sludge, or gums entering or forming in the fuel system is not covered by the warranty.

Water, varnish, foreign particles, sludge, and gums are created or freed by the ethanol and can enter or form in the fuel system. These contaminants can clog fuel filters and damage fuel

system components: pumps, injectors, carburetors. The contaminants must be prevented from entering the engine's fuel system.

### Recommendations for E10 fuel

#### 1. Add a second water separating fuel filter between the fuel tank and the engine.

Volvo Penta gasoline engines (except 3.0GL) are equipped with a water separating fuel filter. A second filter adds extra protection from water and contaminants in the gasoline.

The filter must be approved for gasoline inboard applications (USCG, EU 94/25/EC) and installed in accordance with boat building standards (ABYC, EU 94/25/EC). The filter must have a minimum rating of 50 gallons (189L) per hour.

**2. Water separating fuel filters should be checked frequently for water and contaminants** in accordance with the filter manufacturer's recommendations. Check and/or replace the filters if engine performance is poor. Carry spare filters and needed tools and supplies to change filters while boating.

**3. Use a fuel stabilizer such as STA-BIL®**, if the vessel's fuel will not be used within 30 days. Marine fuel stabilizer provides the best results. Add the stabilizer according to the stabilizer manufacturer's instructions. This will help prevent the formation of fuel contaminants.

**NOTICE!** If the boat will not be used for two months or longer, the fuel system must be properly prepared for this storage period. See your dealer for details.

### Fuel Additives

Avoid any fuel additives and fuel system treatments that contain ethanol or are alcohol-based.

### Fiberglass Fuel Tanks

**⚠ WARNING! Fuel leak, explosion/fire may result from continued use of ethanol fuels in polyester resin fiberglass fuel tanks.**

Some older boats (mid-80's and earlier) may have polyester resin fiberglass fuel tanks. Ethanol can **dissolve the resin in the tank walls**, forming contaminants in the fuel and eventually fuel leakage. Volvo Penta does not recommend the use of ethanol blended fuels in fuel tanks constructed of polyester resin fiberglass.

