



- Diesel fuel classified as Low Sulfur Diesel may still be sold at retail locations outside of California until December 1, 2010.
- ULSD fuel requirements took effect at retail locations that sell diesel fuel in California by September 1, 2006.
- Diesel fuel classified as ULSD is flowing to California distribution and marketing points downstream from refineries (i.e., pipelines, distributors, terminals and transporters) and is now available at many retail locations.
- Effective June 1, 2006, refiners and importers in California must ensure that 100 percent of the volume of the highway and non-road diesel fuel they produce or import for use in California is ULSD-compliant.
- EPA requirements for highway diesel fuel were predominantly implemented in mid-2006.

**ULSD fuel will be the dominant diesel fuel produced after June 1, 2006.**

Diesel-powered engines and vehicles for the 2007 and later model year are designed with advanced emissions control systems and to operate only with ULSD fuel.

In combination with cleaner-burning diesel engines and vehicles, ULSD fuel helps to improve air quality by significantly reducing emissions. Diesel-powered engines and vehicles for the 2007 and later model year are designed with advanced emissions control systems and to operate only with ULSD fuel.

To meet U.S. Environmental Agency (EPA) and California Air Resources Board (CARB) standards, designed to improve air quality, the petroleum industry is producing Ultra Low Sulfur Diesel (ULSD) fuel, a cleaner-burning diesel fuel containing a maximum 15 parts-per-million (ppm) sulfur, replacing most Low Sulfur Diesel fuel which contains up to a maximum of 500 ppm sulfur.

ULSD fuel standards for non-road diesel engines and equipment, such as farm or construction equipment, became effective in California on the same dates as those for highway vehicles. Likewise, nonvehicular diesel fuel uses (e.g., stationary engines) are also subject to this rule either by state or local air district rules.

**Ultra Low Sulfur Diesel fuel and new engines and vehicles with advanced emissions control systems offer significant air quality improvement.**

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Intrastate locomotives and marine diesel fuels used in harbor craft transitioned to 15 ppm ULSD fuel on January 1, 2007. Interstate locomotives and other types of marine vessels are not subject to California requirements but still subject to EPA's rules.

6/1/06	Refiners & Importers	Import/produce <b>100%</b> ULSD for use in California
7/15/06	Downstream from Refiners through Fuel Terminals	All diesel <b>must</b> be ULSD
9/1/06	Retail Outlets	All diesel <b>must</b> be ULSD

Effective Dates for ULSD Fuel in California

One convenient web site can help answer your questions on the new Ultra Low Sulfur Diesel fuel.

visit [www.clean-diesel.org](http://www.clean-diesel.org)

For more information, including guidelines on using biodiesel-ULSD fuel blends and more, along with links to other informational sites, log on today.

Government – Industry – Consumers  
**Clean Diesel Fuel Alliance**  
 INFORMATION CENTER

**Answers to important questions about cleaner-burning diesel fuel, engines and vehicles.**

**ULTRA-LOW SULFUR HIGHWAY DIESEL FUEL**  
 (15 ppm Sulfur Maximum)  
 Required for use in all model year 2007 and later highway diesel vehicles and engines.  
 Recommended for use in all diesel vehicles and engines.

**LOW SULFUR HIGHWAY DIESEL FUEL**  
 (500 ppm Sulfur Maximum)  
**WARNING:** Federal law prohibits use in model year 2007 and later highway vehicles and engines. Its use may damage these vehicles and engines.

**NON-HIGHWAY DIESEL FUEL**  
 (May Exceed 500 ppm Sulfur)  
**WARNING:** Federal law prohibits use in highway vehicles or engines. Its use may damage these vehicles and engines.

## EPA standards require compliance from virtually everyone using diesel fuel and vehicles.

The full transition to ULSD fuel is complex and involves coordination at many levels. Many public and private organizations are collaborating through the Clean Diesel Fuel Alliance to facilitate the transition to ULSD fuel. The U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency, engine, vehicle and component manufacturers, all sectors of the petroleum industry, and fuel consumers, such as truckers, are providing comprehensive information and technical coordination.

For a complete list of participating organizations and contacts for detailed technical and implementation information regarding ULSD fuel, visit [www.clean-diesel.org](http://www.clean-diesel.org).



## Answers to frequently asked questions.

**Q** Where can I purchase ULSD fuel?

**A** All retail outlets that sell diesel fuel in California must sell ULSD fuel.

**Q** May I continue to purchase Low Sulfur Diesel fuel if I prefer to use it in my older vehicle?

**A** In California, all diesel fuel pumps have been dispensing ULSD fuel since September 1, 2006. You may be able to purchase Low Sulfur Diesel fuel outside of California. However, owners of 2007 and later model year diesel-powered highway vehicles must refuel only with ULSD fuel.\*

**Q** How do I know which pump is dispensing ULSD fuel?

**A** Outside of California, federal regulations require the labeling of all diesel fuel pumps to specify the type of fuel dispensed by each pump. Similar vehicle instrument panel and fuel inlet/fill cap labeling is mandated for 2007 and later model year engines and vehicles that require ULSD fuel. Consumers are advised to check the pump labels and vehicle labels to ensure they are refueling with the proper diesel fuel consistent with their vehicle warranties.

**Q** How does ULSD fuel affect air quality?

**A** ULSD fuel will enable the use of cleaner technology diesel engines and vehicles with advanced emissions control devices, resulting in significantly improved air quality. Annual emission reductions will be equivalent to removing the pollution from more than 90 percent of today's trucks and buses, when the current heavy-duty vehicle fleet has been completely replaced in 2030.

**Q** May I continue to blend No. 1 diesel (kerosene) with my diesel fuel to improve cold weather performance?

**A** For regulated parties in the fuel distribution chain (including retailers and fleet operators), only Ultra Low Sulfur Kerosene (No. 1 diesel with no more than 15 ppm sulfur) may be blended with ULSD without downgrading the fuel. Individual vehicle owners may add Low Sulfur (up to 500 ppm sulfur) No. 1 diesel to their vehicle's fuel tank(s), as long as the vehicle does not require ULSD. Regardless of sulfur levels, the blend ratios will remain the same. Refiners are producing Ultra Low Sulfur Kerosene for wintertime blending. Consumers are advised to communicate with their fuel suppliers about acquiring ULSD before winter begins. To winterize ULSD, it is necessary to add ULSD, cold flow improvers or a combination of both. Market participants at every level will need to continue to ensure that the cold flow improvers that are used are appropriate for the base fuel's characteristics, as the diesel fuel market has routinely done in the past. Like ULSD, Ultra Low Sulfur Kerosene may not be available in all areas. Consumers also are advised to check the pump labels and vehicle labels to ensure they are refueling with the proper diesel fuel consistent with their vehicle warranties and using kerosene with the correct sulfur level when blending. Downloadable pump labels in TIF, JGP and EPS formats are available on [Clean-Diesel.org](http://Clean-Diesel.org).

**Q** Is ULSD fuel more expensive than the current Low Sulfur Diesel fuel?

**A** ULSD fuel costs more to refine and distribute than Low Sulfur Diesel fuel. The California Air Resources Board has estimated that it

will cost refiners 2 cents to 4 cents more per gallon to produce 15 ppm sulfur diesel than current CARB Diesel. However, no one can predict with certainty the price of ULSD fuel at the pump. Many factors affect the consumer price of fuels, including the price of crude oil on the global market, geopolitical, weather, transportation and economic events, as well as supply and demand. Visit the Energy Information Administration and the California Energy Commission web sites for more information on fuel prices at: [www.eia.doe.gov](http://www.eia.doe.gov) and [www.energy.ca.gov](http://www.energy.ca.gov).

**Q** How does ULSD fuel affect the power and fuel economy of existing diesel cars, trucks and non-road engines and equipment?

**A** Under typical operating conditions, there should be no noticeable impact on overall power using ULSD fuel.\* Fuel economy may be reduced slightly because the process that removes sulfur also can reduce the energy content of the fuel.\*

**Q** Will ULSD fuel affect the performance of my vehicle?

**A** ULSD fuel is fully compatible with the existing fleet, including 2006 and earlier model year vehicles. In some instances, the introduction of ULSD fuel to older vehicles may affect fuel system components or loosen deposits in fuel tanks. As part of a good maintenance program, owners and operators of existing cars, trucks and buses are encouraged to monitor their diesel-powered vehicles closely for potential fuel system leaks or premature fuel filter plugging during the change-over to ULSD fuel.

**Q** Can Low Sulfur Diesel fuel be burned without operational problems in 2007 model year and later cars and trucks?

**A** Diesel-powered engines for 2007 and later model year vehicles are designed to operate only with ULSD fuel. Improper fuel use will reduce the efficiency and durability of engines, permanently damage advanced emissions control systems, reduce fuel economy and possibly prevent the vehicles from running at all.\* Manufacturer warranties are likely to be voided by improper fuel use. Additionally, burning Low Sulfur Diesel fuel in 2007 and later model year diesel-powered cars, trucks and buses is illegal and punishable with civil penalties.\*

**Q** Do I need to put an additive in my fuel tank to replace the lubricity that was provided by the higher sulfur content?

**A** Like Low Sulfur Diesel fuel, ULSD fuel requires good lubricity and corrosion inhibitors to prevent unacceptable engine wear. As necessary, additives to increase lubricity and to inhibit corrosion are added to ULSD fuel prior to its retail sale. With these additives, ULSD fuel is expected to perform as well as Low Sulfur Diesel fuel.

**Q** What are the penalties for failing to comply with CARB and EPA ULSD fuel standards?

**A** The EPA standards provide strong incentives for suppliers to provide the proper ULSD fuel formulation. Civil penalties of up to \$32,500 per violation per day can be assessed for non-compliance with ULSD fuel standards, or for misrepresentation of the sulfur level of diesel fuel. For more information about ULSD fuel standards and implementation, visit: [www.epa.gov/otaq/diesel.htm#hd2007](http://www.epa.gov/otaq/diesel.htm#hd2007) and [www.arb.ca.gov/homepage.htm](http://www.arb.ca.gov/homepage.htm).

*\* Exception – Some 2007 model year medium-duty and heavy-duty trucks may be equipped with 2006 engines and emission systems. These vehicles are **not required** to use ULSD fuel.*