

Definitions of EIA Distillate Categories and Fuels Contained in the Distillate Grouping

Residential

An energy-consuming sector that consists of living quarters for private households. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking, and running a variety of other appliances. Sales to farmhouses are reported under "Farm" and sales to apartment buildings are reported under "Commercial."

Commercial

An energy-consuming sector that consists of service-providing facilities and equipment of nonmanufacturing businesses; Federal, State, and local governments; and other private and public organizations, such as religious, social, or fraternal groups. The commercial sector includes institutional living quarters. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking and running a wide variety of other equipment.

Industrial

An energy-consuming sector that consists of all facilities and equipment used for producing, processing, or assembling goods. The industrial sector encompasses the following types of activity: manufacturing and mining. Overall energy use in this sector is largely for process heat and cooling and powering machinery, with lesser amounts used for facility heating, air conditioning, and lighting. Fossil fuels are also used as raw material inputs to manufactured products.

Farm

An energy-consuming sector that consists of establishments where the primary activity is growing crops and/or raising animals. Energy use by all facilities and equipment at these establishments is included, whether or not it is directly associated with growing crops and/or raising animals. Common types of energy-using equipment include tractors, irrigation pumps, crop dryers, smudge pots, and milking machines. Facility energy use encompasses all structures at the establishment, including the farm house.

Electric Power

An energy-consuming sector that consists of electricity only and combined heat and power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public -- i.e., NAICS 22 plants. Volumes directly imported and used by the electric power companies are included.

Railroad

An energy-consuming sector that consists of all railroads for any use, including that used for heating buildings operated by railroads.

Vessel Bunkering

An energy-consuming sector that consists of commercial or private boats, such as pleasure craft, fishing boats, tugboats, and ocean-going vessels, including vessels operated by oil companies. Excluded are volumes sold to the U.S. Armed Forces.

On-Highway

An energy-consuming sector that consists of motor vehicles: automobiles, trucks, and buses. Vehicles used in the marketing and distribution of petroleum products is also included.

Military

An energy-consuming sector that consists of the U.S. Armed Forces, Defense Energy Support Center (DESC), and all branches of the Department of Defense (DOD).

Off-Highway

An energy-consuming sector that consists of:

- Construction:** Facilities and equipment including earthmoving equipment, cranes, stationary generators, air compressors, etc.
- Other:** All off-highway uses other than construction. Includes logging, scrap and junk yards, and refrigeration units on trucks.

Distillate Fuel Oil

A general classification for one of the petroleum fractions produced in conventional distillation operations. It includes diesel fuels and fuel oils. Products known as No. 1, No. 2, and No. 4 diesel fuel are used in on-highway diesel engines, such as those in trucks and automobiles, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as No. 1, No. 2, and No. 4 fuel oils are used primarily for space heating and electric power generation.

No. 2 Fuel Oil (Heating Oil)

A distillate fuel oil that has a distillation temperature of 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 396. It is used in atomizing type burners for domestic heating or for moderate capacity commercial/industrial burner units.

No. 4 Fuel Oil

A distillate fuel oil made by blending distillate fuel oil and residual fuel oil stocks. It conforms with ASTM Specification D 396 or Federal Specification VV-F-815C and is used extensively in industrial plants and in commercial burner installations that are not equipped with preheating facilities. It also includes No. 4 diesel fuel used for low- and medium-speed diesel engines and conforms to ASTM Specification D 975.

No. 1 Distillate

A light petroleum distillate that can be used as either a diesel fuel (see No. 1 Diesel Fuel) or a fuel oil.

- **No. 1 Diesel Fuel:** A light distillate fuel oil that has distillation temperatures of 550 degrees Fahrenheit at the 90-percent point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines generally operated under frequent speed and load changes, such as those in city buses and similar vehicles.
- **No. 1 Fuel Oil:** A light distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 550 degrees Fahrenheit at the 90-percent point and meets the specifications defined in ASTM Specification D 396. It is used primarily as fuel for portable outdoor stoves and portable outdoor heaters.

No. 2 Distillate

A petroleum distillate that can be used as either a diesel fuel (see No. 2 Diesel Fuel) or a fuel oil (see No. 2 Fuel Oil).

No. 2 Diesel Fuel

A fuel that has distillation temperatures of 500 degrees Fahrenheit at the 10-percent recovery point and 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines that are generally operated under uniform speed and load conditions, such as those in railroad locomotives, trucks, and automobiles.

No. 2 Diesel Fuel, High Sulfur

No. 2 diesel fuel that has a sulfur level above 500 ppm.

No. 2 Diesel Fuel, Low Sulfur

No. 2 diesel fuel that has a sulfur level between 15 ppm and 500 ppm (inclusive). It is used primarily in motor vehicle diesel engines for on-highway use.

No. 2 Diesel Fuel, Ultra Low Sulfur Diesel (ULSD)

No. 2 diesel fuel that has a sulfur level below 15 ppm. It is used primarily in motor vehicle diesel engines for on-highway use.

Petroleum Administration for Defense District (PADD):

PADD V (West Coast): Alaska (North Slope and Other Mainland), Arizona, California, Hawaii, Nevada, Oregon, Washington.

Fuel oil is classified into six classes, numbered 1 through 6, according to its [boiling point](#), composition and purpose. The boiling point, ranging from 175 to 600 °C, and [carbon chain](#) length, 20 to 70 [atoms](#), of the fuel increases with fuel oil number. [Viscosity](#) also increases with number, and the heaviest oil has to be heated to get it to flow. Price usually decreases as the fuel number increases.

No. 1 fuel oil, **No. 2 fuel oil** and **No. 3 fuel oil** are variously referred to as **distillate fuel oils**, **diesel fuel oils**, **light fuel oils**, **gasoil** or just **distillate**. For example, No. 2 fuel oil,

No. 2 distillate and No. 2 diesel fuel oil are almost the same thing ([diesel](#) is different in that it also has a [cetane number](#) limit which describes the ignition quality of the fuel). Distillate fuel oils are distilled from [crude oil](#).

Gas oil refers to the process of distillation. The oil is heated, becomes a gas and then condenses.

No. 1 is similar to [kerosene](#) and is the fraction that boils off right after gasoline.

No. 2 is the diesel that trucks and some cars run on, leading to the name "road diesel". It is the same thing as [heating oil](#)

No. 3 is a distillate fuel oil and is rarely used.

No. 4 fuel oil is usually a blend of distillate and residual fuel oils, such as No. 2 and 6; however, sometimes it is just a heavy distillate. No. 4 may be classified as diesel, distillate or residual fuel oil.

No. 5 fuel oil and **No. 6 fuel oil** are called **residual fuel oils (RFO)** or **heavy fuel oils**. As far more No. 6 than No. 5 is produced, the terms *heavy fuel oil* and *residual fuel oil* are sometimes used as for No. 6. They are what remains of the crude oil after gasoline and the distillate fuel oils are extracted through distillation. No. 5 fuel oil is a mixture of No. 6 (about 75-80%) with No. 2. No. 6 may also contain a small amount of No. 2 to get it to meet specifications.