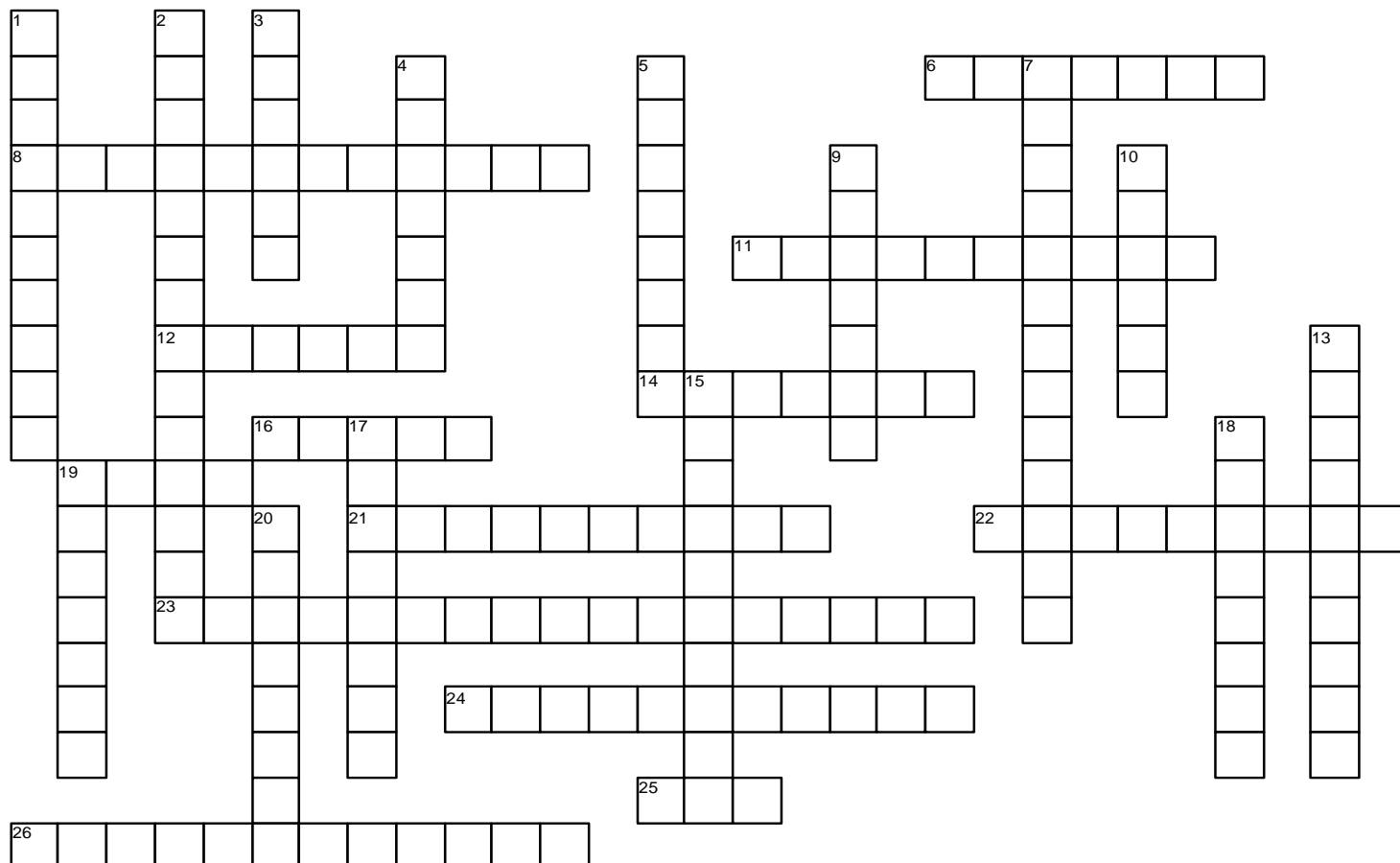


# Gasoline, Alternative Fuels, and Diesel Fuels

## Chapter 28



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### ACROSS

- 6 \_\_\_\_\_ is drinkable alcohol and is usually made from grain.
- 8 Ethanol is also called ethyl alcohol or \_\_\_\_\_.
- 11 Another concern with diesel fuel at lower temperatures concerns \_\_\_\_\_, the low-temperature point when the waxes present in most diesel fuels tend to form crystals that can clog the fuel filter.
- 12 The \_\_\_\_\_ rating of gasoline is the measure of its antiknock properties.
- 14 \_\_\_\_\_, also called diesohol outside of the United States, is standard No. 2 diesel fuel that contains up to 15% ethanol.
- 16 When sold as a fuel, it is also known as liquified petroleum gas (LPG) or \_\_\_\_\_, because the propane is often mixed with about 10% of other gases.
- 19 American Society for Testing and Materials (\_\_\_\_\_) standards for winter-blend gasoline allow volatility of up to 15 pounds per square inch (PSI) RVP.
- 21 \_\_\_\_\_ (also called detonation or ping) is a metallic noise an engine makes, usually during acceleration, resulting from abnormal or uncontrolled combustion inside the cylinder.
- 22 \_\_\_\_\_ is a domestically produced, renewable fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases.
- 23 Today, instead of high heat, cracking is performed using a catalyst and is called \_\_\_\_\_.
- 24 \_\_\_\_\_ describes how easily the gasoline evaporates (forms a vapor).
- 25 Another alternative fuel that is often used in fleet vehicles is compressed natural gas (\_\_\_\_). Vehicles using this fuel are often referred to as natural gas vehicles (NGVs).
- 26 In the late 1800s, crude was separated into different products by boiling in a process called \_\_\_\_\_.

### DOWN

- 1 The density or specific gravity of diesel fuel is measured in units of \_\_\_\_\_.

- 2 The ideal mixture or ratio at which all of the fuel combines with all of the oxygen in the air and burns completely is called the \_\_\_\_\_ ratio, a chemically perfect combination.
- 3 The \_\_\_\_\_ number is a measure of the ease with which the fuel can be ignited.
- 4 \_\_\_\_\_ is the most widely used of all the alternative fuels mainly because of its use in fleets, which utilize a central refueling station.
- 5 All gasoline is said to be \_\_\_\_\_, meaning that it is capable of being interchanged because each grade is created to specification so there is no reason to keep the different gasoline brands separated except for grade.
- 7 \_\_\_\_\_ is similar to catalytic cracking in that it uses a catalyst, but the catalyst is in a hydrogen atmosphere.
- 9 \_\_\_\_\_ can be converted to synthesis gas by a process called partial oxidation, and later converted to methanol.
- 10 The biggest source of methanol in the United States is coal. Using a simple reaction between coal and steam, a gas mixture called \_\_\_\_\_ (synthesis gas) is formed.
- 13 \_\_\_\_\_ fuels contain oxygen in the molecule of the fuel itself.
- 15 \_\_\_\_\_
- 17 \_\_\_\_\_ is a term used to describe a complex mixture of various hydrocarbons refined from crude petroleum oil for use as a fuel in engines.
- 18 E-diesel, also called \_\_\_\_\_ outside of the United States, is standard No. 2 diesel fuel that contains up to 15% ethanol.
- 19 The \_\_\_\_\_ ratio is the proportion by weight of air and gasoline that the injection system mixes as needed for engine combustion.
- 20 \_\_\_\_\_, also known as methyl alcohol, wood alcohol, or methyl hydrate, is a chemical compound formula that includes one carbon atom, four hydrogen atoms, and one oxygen atom.