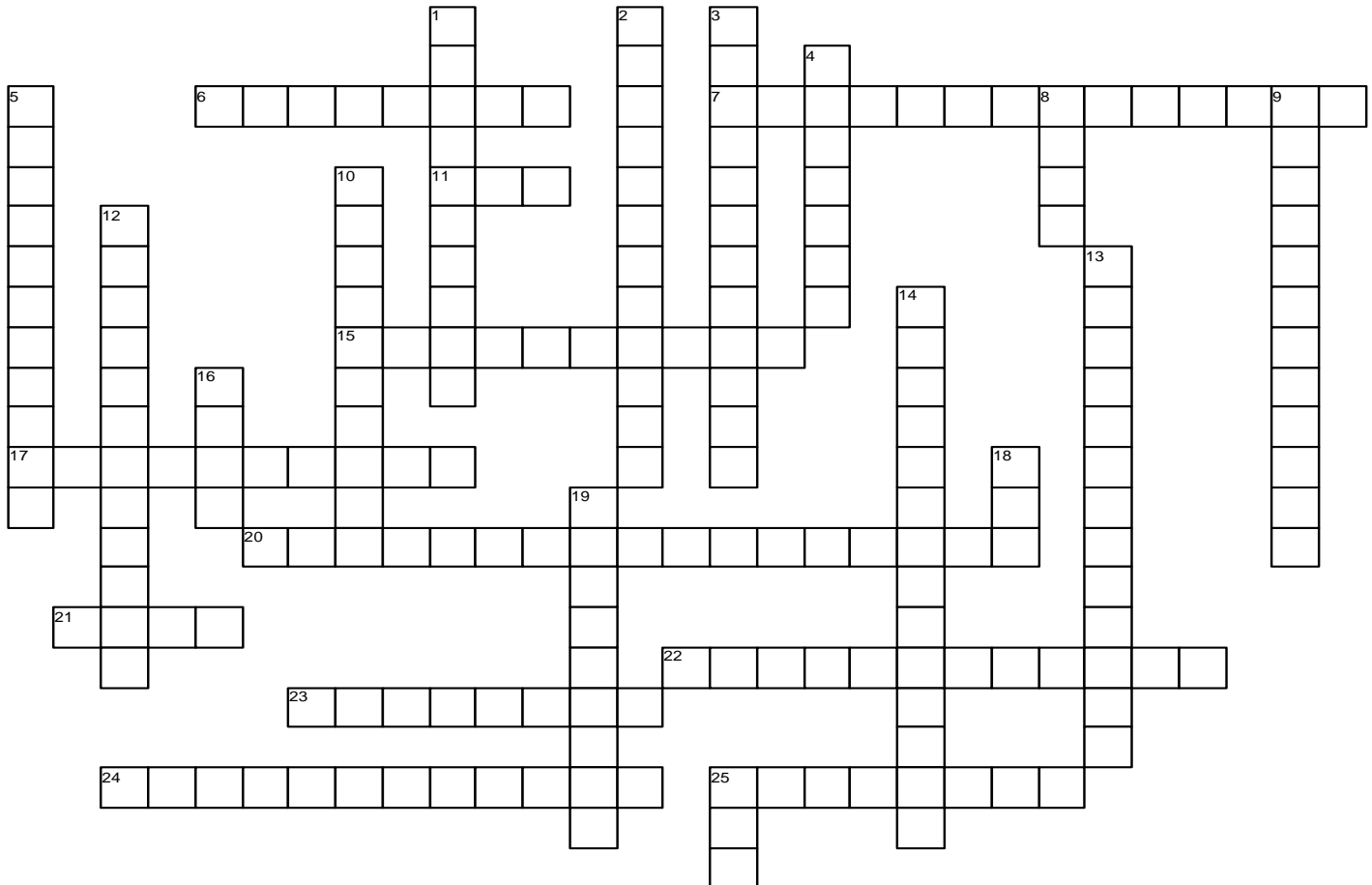


Advanced Engine Performance Diagnosis 8th Edition

Chapter 3

Gasoline, Alternative Fuels, and Diesel Fuels



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ACROSS

- 6 The process of breaking down large hydrocarbon molecules into smaller ones using heat or a catalyst to produce fuel like gasoline.
- 7 A measure of a fuel's ability to resist detonation (knocking) during combustion. Higher AKI indicates better resistance to knock.
- 11 A measure of gasoline volatility, indicating how easily the fuel evaporates at a certain temperature (abbreviation).
- 15 Also known as knocking, this occurs when fuel in an engine's combustion chamber ignites prematurely, leading to abnormal combustion.
- 17 A measure of how easily gasoline evaporates and mixes with air for combustion.
- 20 A refining process used to break down large hydrocarbon molecules into smaller, more useful ones, like gasoline, using a catalyst.
- 21 A term used to describe knocking or detonation in an engine caused by abnormal combustion.
- 22 A measure of a gasoline's resistance to knocking or pre-ignition during combustion. Higher octane fuels provide better resistance to knock.
- 23 A fuel type that allows vehicles to run on gasoline-ethanol blends.
- 24 A measure of diesel fuel's ignition quality. A higher cetane number indicates quicker ignition.
- 25 A term used to describe gasoline that can be mixed and used interchangeably with other gasoline without issues.

DOWN

- 1 A measure of the density of petroleum products, including gasoline, relative to water.
- 2 A process used in refining crude oil by heating it to separate it into different components based on boiling points.
- 3 Another term for ethanol, especially when produced from grains like corn.
- 4 An alcohol-based fuel made from plants like corn, used as an additive in gasoline to reduce emissions.
- 5 _____ fuel vehicle is a vehicle designed to run on alternative fuels other than traditional gasoline or diesel.
- 8 The lowest temperature at which diesel fuel can pass through a fuel filter without clogging (abbreviation).
- 9 Another term for ethanol, often used in fuel blends like E10 and E85.
- 10 The temperature at which diesel fuel begins to form wax crystals, which can clog fuel filters.
- 12 The ratio of air to fuel in the combustion mixture. It plays a key role in engine performance and emissions.
- 13 A refining process used to break down large hydrocarbon molecules into smaller ones using hydrogen and a catalyst.
- 14 The ideal air fuel ratio for complete combustion, often referred to as 14.7:1 for gasoline.
- 16 An organization that sets standards for various materials and products, including fuel.
- 18 Natural gas stored under pressure and used as an alternative fuel in vehicles (abbreviation).
- 19 A renewable fuel made from plant oils or animal fats, designed for use in diesel engines.
- 25 A vehicle capable of running on gasoline or gasoline-ethanol blends, such as E85 (abbreviation).