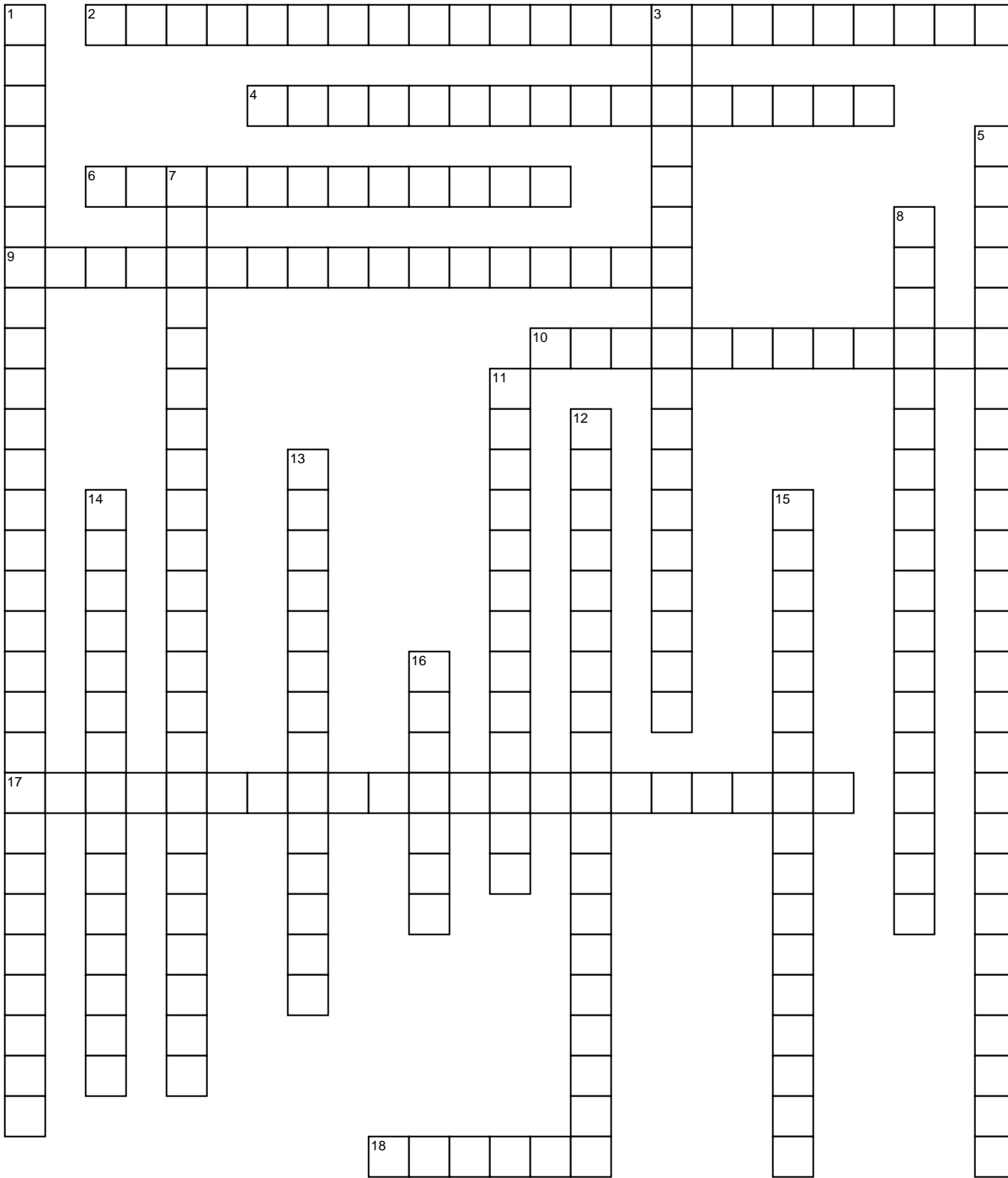


Chapter 15

Exhaust and Aftertreatment Systems



ACROSS

- 2 The _____ is located in a stainless-steel housing near the diesel oxidation catalyst (DOC) and is responsible for making the exhaust virtually smokeless.
- 4 An _____ is a

colorless, tasteless, and odorless gas when it leaves the engine, but as soon as it reaches the atmosphere and mixes with more oxygen, nitrogen oxides (NO₂) are formed.

6 _____ are unburned diesel

fuel and are measured in parts per million (ppm).

9 The exhaust aftertreatment system uses multiple _____ to monitor the function of components within the system.

10 Newer diesel vehicles use a wide-band _____ that is capable of accurately monitoring the oxygen (O₂) level in the exhaust stream throughout its broad operating range.

17 Near the inlet of

the SCR catalyst is the _____.

18 There is about 21% _____ (O₂ in the atmosphere), and most of this _____ (O₂) should be "used up" during the combustion process to oxidize all the hydrogen and

carbon (hydrocarbons) in the diesel fuel.

DOWN

1 The addition of an _____ to the exhaust system will allow the engine to warm-up to operating conditions more

- quickly.
- 3 During an _____ event, heat is created by adding fuel to the exhaust stream.
- 5 The _____ monitors the inlet and outlet pressure during the regeneration event to determine when the restriction no longer exists.
- 7 The _____ is the first major component in the exhaust aftertreatment system after the exhaust downpipe.
- 8 _____ is a mixture of 32.5% laboratory grade urea and 67.5% deionized water.
- 11 _____ is the result of oxygen (O₂) in the engine, combining with the carbon of the diesel fuel.
- 12 The heat needed for the regeneration event may occur _____.
- 13 _____ is a result of partially burned diesel fuel.
- 14 The _____ is a critical part of the exhaust system and can be seen coming off the turbocharger.
- 15 _____, also called soot, refers to tiny particles of solid or semisolid material suspended in the atmosphere.
- 16 As the diesel exhaust fluid (DEF) heats up, it separates into carbon dioxide (CO₂) and _____ (NH₃).