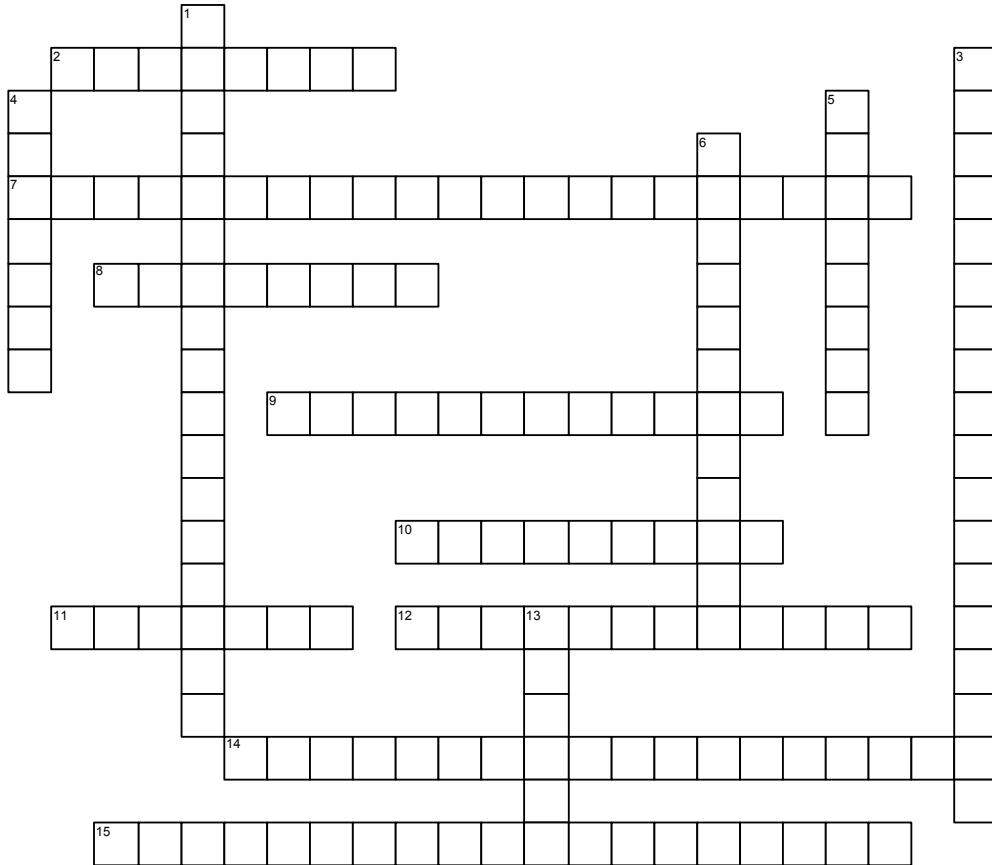


Catalytic Converters

Chapter 28



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ACROSS

- 2 The substrate is coated with a porous aluminum material called the _____, which makes the surface rough.
- 7 The converters used on OBD-II vehicles have _____, due mostly to the cerium coating in the catalyst rather than the precious metals used.
- 8 The converter substrate contains small amounts of _____.
- 9 Another name for a preconverter is a _____.
- 10 The converter substrate contains small amounts of _____.
- 11 The simple _____ involves tapping on the catalytic converter using a rubber mallet.
- 12 Some vehicles have used a small, quick heating oxidation converter called a _____ that connects directly to the exhaust manifold outlet.
- 14 A _____ is an aftertreatment device used to reduce exhaust emissions outside of the engine.
- 15 The catalytic converter does not work when cold, so it must be heated to its _____ of close to 500°F (260°C) before it starts working at 50% effectiveness.

DOWN

- 1 In a _____ all three exhaust emissions are converted to CO₂ and H₂O.
- 3 Preconverters have a small catalyst surface area close to the engine that heats up rapidly to start the oxidation process more quickly during cold engine warm-up, for this reason they were often called _____.
- 4 The converter substrate contains small amounts of _____.
- 5 A _____ is a chemical that helps start a chemical reaction but does not enter into the chemical reaction.
- 6 A _____ tool can be made by using an oxygen sensor housing and epoxy or braze to hold the tube to the housing.
- 13 Since the early 1990s, many converters also contain _____, an element that can store oxygen.