

The Magic of Ceramics -- Study Guide, Chapter 9

1. Before reading this chapter, go outside to your or a family member's car. Look into the engine compartment, under the car, at the passenger compartment, and at the exterior. List at least 10 items that are metal, 10 items that are organic, and 10 items that are ceramic. Do you see any composites?

Metals	Organics (Polymers)	Ceramics	Composites

2. By 1970, how much air pollution was being produced in the U.S. by motor vehicles?
3. Explain how an oxygen sensor works.
4. Explain how a catalytic converter works.
5. How are materials involved in the electronic engine-control system?
6. What materials have been used for water pump seals?

7. What is the benefit of a turbocharger?

8. How are ceramic fibers used in a car?

9. What are some uses of ceramics in diesel engines?

10. How might ceramics be used in making better pistons?

11. What are some of the applications of ceramic magnets in cars?

12. How are ceramics used in the manufacturing of cars?

13. Now go back and look at the first question. Do you have any additional items to add to your list?