

Test your knowledge of the elements and elemental chemistry!

1. Which is the only letter in the alphabet not to appear in the Periodic Table?
2. What is the only element that will not form a solid?
3. Only two elements are liquids at room temperature and pressure. What are they? Name a third that melts in your hand!
4. What is the rarest naturally-occurring element in the earth's crust?
5. The Frank Gehry-designed Guggenheim Museum in Bilbao, Spain is sheathed in 33,000 square meters of what pure element?
6. How does a vending machine distinguish between American and Canadian coins (in either country)?
7. What element is a potential nuclear fuel and almost as plentiful as lead?
8. In preindustrial times, what was the major source of elemental phosphorus?
9. The Washington monument (completed in 1884) is capped by 2.84 kg of a precious metal. What metal is it?
10. When archaeologists want to determine if a campsite may have been used by the Lewis and Clark expedition, for what element do they test in the soil?
11. What percentage of U.S. patents are chemistry or chemistry-related?
12. The first synthesis of an organic molecule from inorganic material marked the beginning of the modern era of organic chemistry. Name the chemist, the product, the starting material, and the year.
13. Rome's Dio Padre Misericordioso Church, also known as the Jubilee Church, retains its bright white color because of nanostructured titanium dioxide (TiO_2) embedded within the cement binder in the concrete walls. What is the chemistry behind this application?
14. Bonus question: During what months is the ozone hole over Antarctica largest, and why?