



Heartland Science



Ohio's Legacy of Discovery & Innovation

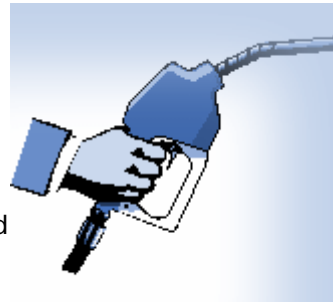


Energy

From Amps to Air Conditioning

From Leaded Gas to Air Conditioning

In 1921, Thomas Midgley, Jr. discovered that adding tetraethyl lead to gasoline would allow engines to run smoothly on low-octane gas. Midgley earned 117 patents during his career which began as a mechanical engineer and chemist. Midgley was raised in both Pennsylvania and Ohio, and graduated from Cornell University in 1911 with a degree in Mechanical Engineering. His father was an inventor who immigrated to the U.S. from London. One of Midgley's most well known accomplishments was developing tetraethyl lead as an "anti-knocking" additive to gasoline. Midgley discovered that "knock" in internal combustion engines was actually the result of fuel failure, not engine failure.



He also developed the refrigerant dichlorodifluoromethane -- known as Freon. Freon was valuable because it was nonflammable and nontoxic. At the time, ammonia, sulfur dioxide, or chloromethane were used in home refrigerators. These gases could cause illness and even death when leakage occurred.

Midgley also discovered chlorofluorocarbons (CFCs) which were originally used as aerosol spray propellants. They are also used in the manufacture of insulation foam, packing materials, pesticides, and a variety of cleaners. Ironically, two of Midgley's major discoveries, ozone-burning CFCs and leaded gas have since been banned by the U.S. Environmental Protection Agency.



Find out more...

- The History of Freon (<http://inventors.about.com/library/inventors/blfreon.htm>)