

Pressure and the imploding can – transcript

Pressure is a continuous physical force that acts against the surface area of an object. The pressure acting on an object is the force per unit area. In this experiment an empty can and a water bath will be used to show the effects of pressure.

About 100 centimetres cubed of water is poured into the can.

The can is placed over a lit Bunsen.

As the temperature rises the kinetic energy of the particles increases and the liquid water changes state and becomes a gas. The can retains its shape as the pressure inside it is the same as that outside it.

Eventually steam can be seen leaving the can.

Once steam is produced the can is quickly (but safely) removed from the heat.

The lid is placed on the can and tightened.

The can is then placed into the iced water.

The cooling caused by the iced water causes any remaining steam in the can to condense, and the pressure inside the can falls rapidly. This means that the external pressure is greater than the internal pressure and the can implodes.

The force created by pressure can be very destructive. It can also be very helpful.

In what cases would pressure be useful and where might it be harmful?

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