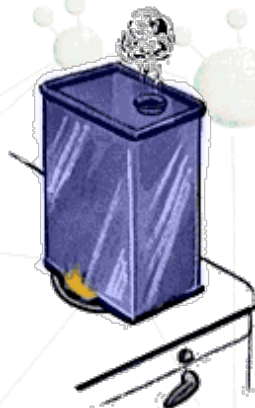


Bizarre Stuff

You Can Make in Your Kitchen

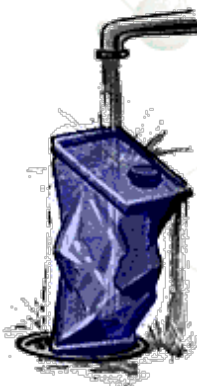
Collapsing a can with air pressure



Atmospheric pressure is strong enough to crumple a metal can. You can prove this using a metal can with a screw on lid. It is best to use a new can that has never been filled. Avoid using cans that contained turpentine, paint, or any other flammable material. This experiment involves heating the can over a flame and can cause a fire or explosion if even a trace of flammable material is still contained within the can. If you are forced to use a can that originally contained a possibly flammable material, wash it thoroughly, being absolutely certain that not even a minute amount of the original substance remains. Also avoid using cans with any sort of non-metal lining.

Pour a small amount of water into the can and set it, cap off, onto the stove. Heat it until steam pours out from the opening. Turn off the burner and, using a potholder, quickly screw the cap in place. Put the can into the sink and run cold water over it. The can will buckle.

When the air in the can was heated, its pressure rose and some of it escaped. When the lid was screwed on, the steam and heated air remained at about the same pressure as the surrounding atmosphere. Once the can cooled (sped up by the cold water) the air inside cooled as well. Its pressure dropped, allowing the greater air pressure of the outside atmosphere to crush the can.



This can also be done (actually much easier) using an aluminum soda (pop) can. Put a little water in it (app. 3cm) and heat on a hot plate until it begins to steam. If you must do this over a gas or other flame, don't use a very high flame or an empty can; the paint may burn or, worse, the aluminum may melt. Using tongs, quickly flip it upside down into a small tray of ice water, which should be 6 or so inches (15cm) deep. The water will prevent the outside air from entering. A little of the ice water will be drawn up into the can, but not enough to equalize the pressure, and the can will crush.

- Soda can crush submitted by Taylor Alexander, Bob Spiking, and many others



CARTESIAN DIVER

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