

Student experiment
(1st - 4th grade)

Gas from a tablet

⌚ Time: max. 15 min.

Safety:

Be careful with fire

Instruments:

- a small bottle
- several beakers
- crucible tongs
- tea candles
- balloons
- matches
- scale
- a straw

Chemicals:

- water-activated multivitamin tablets which fizz (antacid tablets such as Alka-Seltzer® can be substituted)
- water

Experiment:

- Place three crushed multivitamin tablets in the bottle.
- Pour two finger-heights of water into the bottle and immediately seal it using a balloon. The balloon will begin to fill with gas.
- Twist the balloon neck shut, and then remove it from the bottle mouth.
- Carefully place a straw into the balloon opening, so that the gas can only escape through the straw.
- Place the end of the straw into a beaker (sitting on a scale) and let some of the the gas slowly flow into the beaker. What happens?
- Gently place the glass aside.
- Light a tea candle and carefully place it into a second beaker using a pair of tongs.
- Now light a second candle and carefully lower it into the beaker which you set aside in the first part of the experiment. What happens?
- Carry out the first part of the experiment again and collect the gas in a beaker again.
- Place a lighted candle in another beaker and carefully pour the gaseous contents of the first beaker over the lighted candle in the second. What happens to the candle?

Advice for the teacher:

Water-activated multivitamin tablets fizz when water is added and the balloon is filled with gas. The transparent, colorless gas registers additional weight when it is added to the empty beaker on the scale. The lit tea candle is extinguished when the gas from the tablets is added to the beaker. The same is true when the gas is poured from one beaker over a burning candle in another container.

The pupils should learn that the tablets give off a colorless, transparent gas. This gas can be collected in a beaker, poured like a liquid and extinguishes flames. The latter means that the gas is heavier-than-air and noncombustible. Its name is carbon dioxide.

Tip:

The gas from the balloon should be let out extremely slowly so that none is lost!
