

Student experiment
(5th - 10th grade)

Producing/detecting CO₂

🕒 Time: max. 10 min.

Safety:

safety glasses

Do not press the stopper too tightly into the test tube! Too much gas production can pop the stopper out and allow the gas to escape, but stoppers which are overly tight can cause the test tube to shatter under high pressure. The needle tips should be trimmed off with pair wire cutters. Be careful not to crush the tube while doing this.

Instruments:

- 2 (pink) needles (1,2 / 40 mm)
- 1 20ml syringe
- 1 test tube
- 1 stopper
- 1 small ampoule
- Alkaseltzer® or fizzy vitamin tablet
- 1 pair wire cutters

Chemicals:

- lime water, Ca(OH)₂
- 1 Alkaseltzer® or water-soluble vitamin tablet
- water

Preparation:

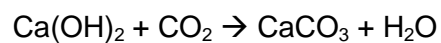
Remove the needle points with the pair wire cutters. Be careful not to crush the tube while doing this. The 20ml syringe should function smoothly and be lubricated using silicone oil.

Experiment:

- Press one needle completely through the rubber stopper and attach a 20ml syringe to it.
- Place ¼ of an Alkaseltzer® or water-soluble vitamin tablet in the test tube and add a little water. Stopper the test tube closed, **but not too tightly!**
- Catch the escaping gaseous product using the syringe. **Make sure that the syringe plunger slides freely and easily.**
- Bubble the collected gas into a small ampoule filled with lime water (Ca(OH)₂).

Observations: The lime water becomes cloudy as the gas passes through it.

Results: The dissolving tablet releases CO₂ gas, which can be detected using lime water.



Disposal: no hazardous products
