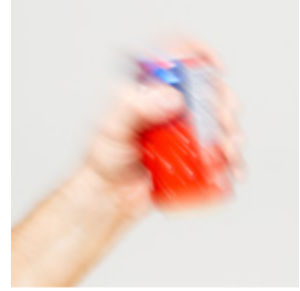


Soda Can Shake-Up

1. Vigorously shake a sealed can of soda.
2. Invite a dinner guest to immediately open the can! Of course, most sane people will refuse the offer.
3. With a little science know-how, you'll be able to open the can without spilling a drop. The secret is to use your finger to snap the side of the can. Turn the can a quarter turn and snap again. Snap the side of the can at least 6 times before opening it.
4. Here's the true test... open the can. Pssst! That sound should be music to your ears. When the can is opened, the gas simply escapes (no liquid explodes from the can), and you bow to tremendous applause.

Once you've mastered the technique, try your newly discovered skill on different kinds of soda... but watch out for diet sodas. There's no guarantee that snapping the side of a can of diet soda will keep you from getting sprayed when you open the can of shaken soda. Some scientists speculate that diet sodas contain more carbon dioxide gas while others believe that there is a unique interaction that goes on between the artificial sweetener, the preservatives, and the carbonated water. No one fully understands the reason. So, if you choose to shake up a can of diet soda... well, you're on your own.



How does it work?

Since the fizz in the soda is actually dissolved carbon dioxide gas, the goal is to keep as much of the gas in the bottle as possible. Soda fizzes when dissolved carbon dioxide gas is released in the form of bubbles. At the bottling plant, carbon dioxide molecules are forced into the soda in an amount that is greater than would ordinarily dissolve under atmospheric conditions. As soon as you open the bottle, most of the excess gas escapes into the room – that's a given! So, it's your job to find a way to keep the remaining gas in the liquid.

Shaking the unopened can of soda causes bubbles of carbon dioxide to line the inside walls of the can. When you open the can, the pressure in the can goes down and the volume of each bubble goes up (*Boyle's Law*). Whoosh! The quickly expanding bubbles force the liquid that rests above it out of the can.

Most people have learned to tap the top of the can before opening it. Scientifically speaking, this does nothing. The trick is to dislodge the bubbles from the side walls and bottom of the can so they can float to the top of the can (because gas is lighter than a liquid). Once the bubbles are at the top of the can there will only be a small amount of liquid blocking their escape when you open the can. As a result, the soda doesn't spray. Remember, snap the side instead of tapping the top.