Anthony Frazier

Will corn syrup and water mix homogenously? Why or why not?

The corn syrup sinks in the water because it is denser than water. It seems to stay there without much initial dissolving. After stirring, the corn syrup dissolves into the water and the solution turns clear.

After mixing it will dissolve because it is water soluble.

What element is used for the atomic clock? What particle does it emit?

Since 1967, the official definition of a second is 9,192,631,770 cycles of the radiation that gets an atom of the element called cesium to vibrate between two energy states. Inside a cesium atomic clock, cesiumatoms are funneled down a tube where they pass through radio waves.

 In a [hydrogen maser](http://en.wikipedia.org/wiki/Hydrogen_maser) clock the gas emits [microwaves](http://en.wikipedia.org/wiki/Microwaves) (the gas *[mases](http://en.wikipedia.org/wiki/Maser)*) on a hyperfine transition, the field in the cavity oscillates, and the cavity is tuned for maximum microwave amplitude. Alternatively, in a caesium or rubidium clock, the beam or gas absorbs microwaves and the cavity contains an electronic amplifier to make it oscillate. For both types the atoms in the gas are prepared in one electronic state prior to filling them into the cavity. For the second type the number of atoms which change electronic state is detected and the cavity is tuned for a maximum of detected state changes.

What is mercury’s freezing temperature?

-37.89°F (-38.83°C)

What is the structure of a compound of a household object?

Alka Seltzer contains sodium bicarbonate, CHNaO3