

Classroom Chemistry – Hot Ice

Hot ice (sodium acetate) is an interesting chemical that you can prepare yourself.



Materials:

- 1 L of vinegar
- 4 tablespoons baking soda.
- large sauce pan
- Stir spoon
- Measuring spoons
- Disposable pan or plate
- Glass jar
- Plastic wrap

Procedure: (Remember to have your parent's permission and they have time to watch and help you.)

- Add the vinegar to the pan and then slowly stir in the baking soda. Watch out - it fizzes.
- Use medium heat to boil the solution to concentrate the sodium acetate (about an hour). Higher heat may cause the solution to turn yellow or brown. It will not affect the results.
- Once you have about 100-150 ml remaining, remove from the heat. A crystal skin or film usually forms on the surface.
- Pour it into a glass jar, cover it with plastic wrap to prevent further evaporation, and place in the refrigerator.
- Make sure you have no crystals in the solution. If you do, add a small amount of vinegar to the solution to dissolve it.
- When cool you can make it crystallize by seeding it with crystals from the pan or sometimes by just touching it.

What's happening?

The baking soda and vinegar react to form sodium acetate, boiling removes most of the water. The refrigerator makes it a supercooled liquid, a liquid below its usual melting point. The crystallization process is exothermic; it gives off heat (ex as in exit & thermic as in heat).

You can re-melt the sodium acetate and re-use it many times.

Extension:

Slowly pour the solution into a shallow dish or plate. If the crystals do not immediately form, seed it. The crystals will grow up towards where you are pouring so if you are careful you can make towers of warm ice. The chemicals in this activity are safe (in fact if you like 'salt & vinegar' chips you've eaten sodium acetate).

This activity is based on our "Classroom Chemistry" kit that is currently under development. Our teaching kits (described on our website) are loaned out FREE to provide classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering as a classroom speaker or allow your business as a field trip location.



Future Event: Praxis sets up the Science Kits used in the [Summer Camps for Kids](http://www.praxismh.ca/MHCsummercamp.html) hosted by Medicine Hat College. <http://www.praxismh.ca/MHCsummercamp.html>.

The Annual General Meeting of the Praxis Society will be held at 7:00 pm on June 20, 2012 room B301 at Medicine Hat College. Members of Praxis as well as the general public who may be interested in joining Praxis are invited to attend but please RSVP.

Lorne Cooper, Regional Executive Director

PRAXIS, "Making Science Fun". Contact Praxis at praxis@praxismh.ca, www.praxismh.ca, Tweet or follow us @PraxisMedHat, or friend us on Facebook. Address: c/o 200 7th Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.