

Fruit Juice Caviar

Compiled by David A. Katz from several sources



The process is simple: sodium alginate is mixed into a liquid. When that liquid touches a solution of calcium chloride (the main ingredient in Tums), it turns the liquid into jelly, so when you drip sodium alginate juice into a calcium chloride bath, the drops gel around the outside, while leaving the center liquid. Essentially, like fish eggs, they burst when you bit into them.

Sodium alginate and calcium chloride (food grade) can be found in natural food stores and on the Internet. These ingredients are not expensive and only small amounts are needed. Prices do vary widely, so shop around through several sources.

Fruit juice caviar (also called pearls) make a fun addition to any fruity cocktail, or you can substitute them for the juice in your favorite mixed drink, dump a spoonful into a glass of champagne and watch them bounce around, or use them as a topping for desserts such as chocolate Chantilly, chocolate mousse, or ice cream. Use your imagination.

Safety for Food Chemistry (for a more complete list go to <http://www.chymist.com/Safety%20with%20Food%20Chemistry%20Experiments.pdf>)

All materials used in this experiment must be food grade or USP grade.

Any food materials used for tasting must be in new, unopened packages or containers.

All apparatus used in food experiments must be new or never used with any laboratory chemicals. It is preferred that they have been washed in a dishwasher prior to use and dried in the normal or sterilized heat cycle. Note: The use of a dishwasher does not guarantee that apparatus, previously used for chemical experiments, is free from contamination by laboratory chemicals.

Before materials are placed in the laboratory, all bench tops must be cleaned with a food safe cleaner. After cleaning, the bench tops must be covered with a food safe material that has not been stored near any laboratory chemicals. Aluminum foil can be used.

Fruit Juice Caviar

Ingredients

- 1 cup fruit juice (strained to remove pulp)
- 1 teaspoon sodium alginate (2.0 g) (Note: Different brands of sodium alginate have different thickening properties. Start with ½ teaspoon of the sodium alginate and add more if needed.)
- 1 cup water
- 1 teaspoon calcium chloride (2.5 g)

Procedure

1. In a small bowl, add sodium alginate to juice, gradually sprinkling it into the juice and whisking the mixture. This can be done by hand mixing or by use of an immersion blender. If the sodium alginate does not dissolve in room temperature juice, some gentle heating of the mixture may be required.
2. The sodium alginate-juice mixture will be thickened, but it should not be a gel. If too thick, add additional juice. Depending on the juice, it may need to be strained by pouring through a fine mesh strainer into a bowl.
3. Combine water and calcium chloride in a bowl, stirring to dissolve.
4. Pour the juice into a plastic squeeze bottle or large syringe and drip it into the water until the bottom of the bowl is covered in a solid layer of spheres. Let sit one minute.
5. Use a strainer to scoop the spheres out of the liquid or place a strainer over a second bowl, then pour the contents of the first bowl through the strainer.
6. Rinse the pearls in the strainer with fresh water and transfer to a kitchen towel to dry.
7. Repeat until you run out of juice.
8. Serve within an hour, because it will gel all the way through with time. Not bad, but not as exciting as having the spheres pop to let the interior juice out.

Fruit Caviar – another version



Recipe for **Ruby Red Grapefruit “Caviar”**

Ingredients

- 9 oz. Ruby Red Grapefruit Juice (or other fruit juice)
- 18 oz. Cold (room temperature) Water
- 1 g Sodium Alginate (or Algin)
- 3 g Calcium Chloride (or Calcic)
- Digital scale
- 1 large bowl
- 2 medium bowls
- Immersion blender
- Fine mesh strainer
- Plastic squeeze bottle with cone-shaped top or a large syringe

Procedure

1. In one of the medium bowls, fill with cold water until the bottom is covered up to about four inches. Set this water bath aside. It will be used as the final step in making the fruit caviar.
2. In the large bowl, mix the sodium alginate with 1/2 the fruit juice and blend till completely dissolved.



3. Mix in the remaining fruit juice. The final mixture should be thickened, but should not be jelled



4. Strain into empty medium bowl and allow to sit to remove any air bubbles.



5. In a medium bowl, dissolve the calcium chloride in the 18 oz. of cold water. Use a spoon or a small whisk to stir until completely dissolved.



6. Fill syringe or squeeze bottle with the juice mixture. It will be a little thick and “goopy”.



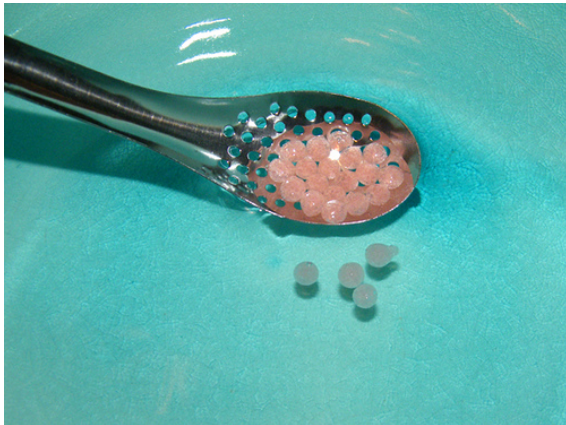
7. Gently discharge the mixture into the calcium chloride bath drop by drop. It will take a little practice to obtain uniform drops. The size of the drops can be easily controlled using a squeeze bottle rather than a syringe.



8. After a minute, gently remove the “caviar” using a straining spoon and add to the cold water bath.



9. Wait a couple of minutes then remove the “caviar” from the fresh water into a serving bowl or serving spoon. A small mesh strainer can be used to remove the “caviar”.



Note: Have a kitchen towel folded next to the water bath. Right after removing a spoonful of caviar (with the strainer or collecting spoon), gently tap the bottom of the spoon onto the towel and to remove the excess water.

10. Serve and enjoy!



A Trio of Sizes.

Different sizes can be made by dropping the alginate-fruit juice mixture at different rates. If dropped slowly, larger pearls can be made.

