Crystal growing

Name	Crystal growing
Description	Experimenting with crystal growing
Status	Running
Contact	metalgamer
Participants	
Repository	

Copper Sulfate



Picture 1.1: Materials

The first crystals, that we are growing are copper sulfate crystals. They give an intense blue color and are quite easy to grow. For this, we need to acquire Copper(II)-sulfate pentahydrate. The chemical formula is: $\ce{ CuSO4 * 5 H2O }$

Be aware that Copper(II)-sulfate pentahydrate is an irritant and when swallowed it is even toxic. Handle with care and take the necessary precautions!

Gather your materials:

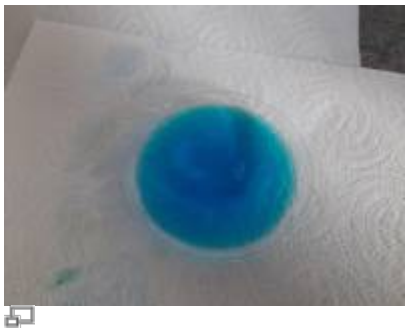
- Copper(II)-sulfate pentahydrate
- Water
- Beaker
- Glass dish
- Spoon
- Skewer
- String
- Funnel
- Cotton pad
- Tape
- Plastic Wrap



Picture 1.2: Finished solution of Copper(II)-sulfate pentahydrate

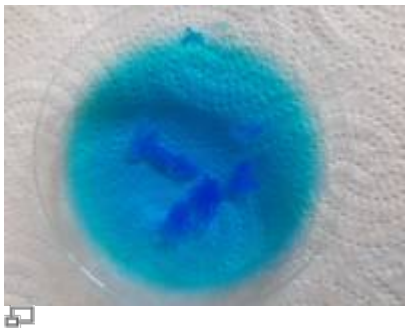
Begin with boiling about 800ml of water. When it is boiling, transfer it to the beaker and start adding Copper(II)-sulfate pentahydrate until nothing will dissolve anymore. It should have a deep blue color, see picture 1.2.

Pour a little of the solution onto the glass dish, this will be used to grow some seed crystals. See picture 1.3.

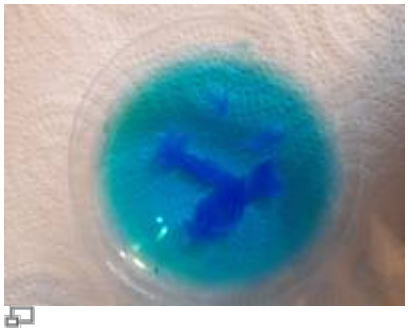


Picture 1.3: Solution on glass dish

Now, we have to wait, until we have seed crystals:



Picture 1.4: After 2 hours



Picture 1.5: After 3 hours

After about 3 hours, we can pick out one of the seed crystals and fix them to a piece of string (picture 1.5). Use a skewer to fix the height of the crystal.



Picture 1.6: Seed crystal on string



Picture 1.7: Seed crystal in solution

This seed crystal can now be hung into the solution, attach the skewer with tape and let it sit overnight. Cover the beaker with plastic wrap to protect the solution from dust.



Picture 1.8: Crystal after growing overnight



Picture 1.9: Polycrystals of Copper(II)-sulfate pentahydrate

The next day, take out your polycrystals and filter the solution. Use a cotton pad in your funnel.



Picture 1.10: Filtering



Picture 1.11: Filtering with cotton pad

Clear out the bottom of the beaker, as a lot of crystals have grown on it.



Picture 1.12: Crystals on bottom of beaker

After the solution has been filtered, pour it back into the beaker and hang your polycrystal back into it.



Picture 1.13: Crystals in solution after filtering

After one week, filter the solution again and clean the beaker.



Picture 1.14: Crystals after one week



Picture 1.15: Crystals after one week

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