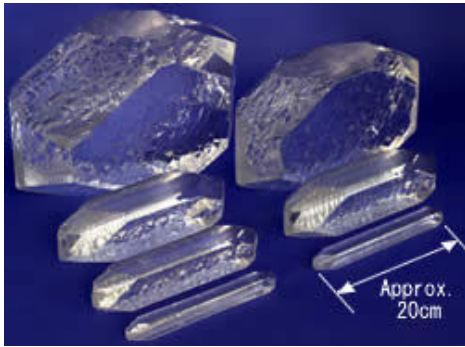


Synthetic quartz crystals production



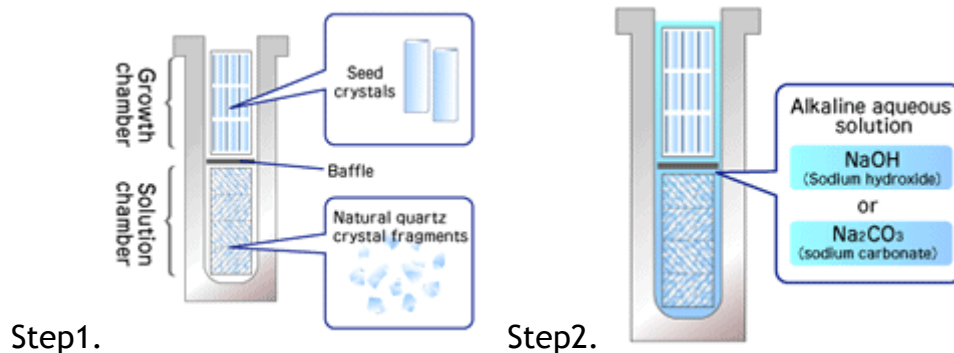
Nowadays synthetic quartz crystal is used in many electronic devices. Typically used in clock functions for electronic equipment such as cell phones, PCs and digital cameras, MP3, keyless entry systems for automobiles,

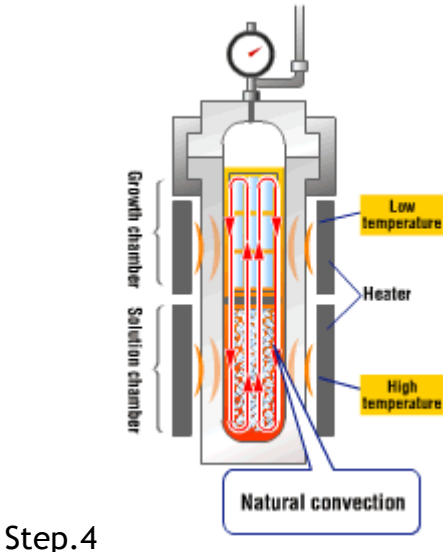
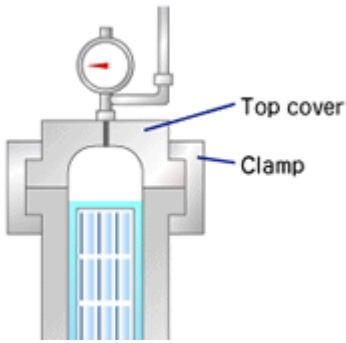
Synthetic quartz crystals are grown over a period of months from fragments of natural quartz placed in an immense pressure cooker called an

autoclave. In order to grow a synthetic quartz need a raw material - natural quartz crystals placed in alkaline solution (approx. 360 deg. C & 1100 kg/cm² of pressure) for 2-6 months.

Step by step:

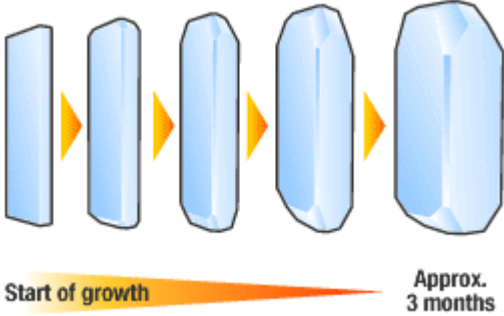
1. Fragments of natural quartz are placed in a solution chamber in the lower half of the autoclave, which is separated from the upper half by a baffle. Seed crystals are hung in the upper half (the growth chamber).
2. The autoclave is filled to about 80% with an alkaline aqueous solution.
3. The autoclave is sealed with a top cover and clamp.
4. The inside of the autoclave is heated. The temperature of the upper (growth) chamber is lower than that of the lower (solution) chamber, producing natural convection.
5. Crystals are grown slowly inside the autoclave, under high temperature and high pressure. (Crystal thickness increases at a rate of about 0.5 mm per day.)





Step 3.

Step 4.



Step 5.