

What are the four main stages of the construction of a photovoltaic module?

### Multi-crystalline ingot

What material is being presented at the beginning of the video?

With what material must the crucible be coated?

What happens to the crucible after being coated?



What happens to the silicon in the furnace?



What is the consequence of the cooling process after the silicon blocks have been taken out of the furnace?



Please legend picture on right



**Wafer**

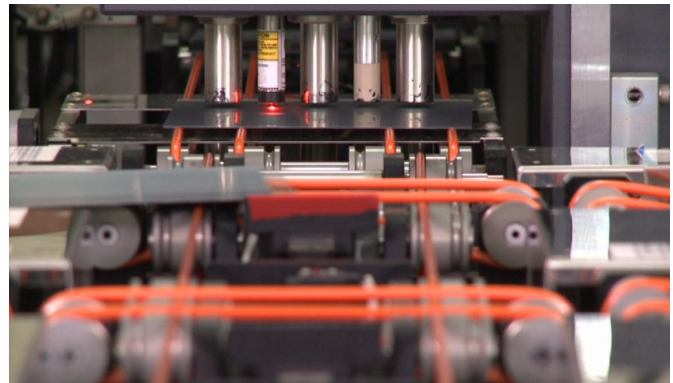
How are impurities removed from the multi-crystalline ingots?



How are multi-crystalline wafers produced?



What is the final step of the process to turn ingots into wafers?

**Cells**

What happens to the wafers in the various baths they are placed in?

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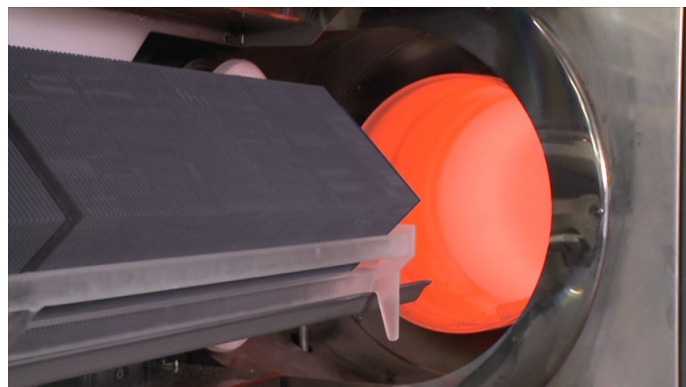
**Doping**

What is the temperature range?

What kind of gas is used in the diffusion furnace?

What is the effect of this furnace?

What gives the cell its blue colour?

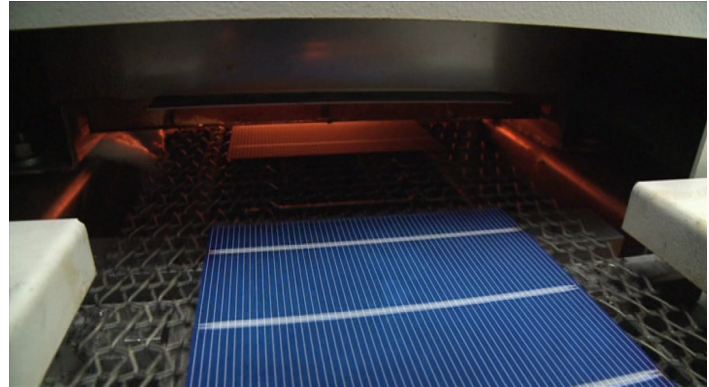




What material is used to act as a conductor for the electricity produced by the cell?

How does it become embedded in the surface of the silicon layer?

According to what kind of criteria are the cells sorted?



### Modules

How are cells assembled?

What are the three elements that surround the assembled cells?

What is the material used for the frame?



What happens to the finished modules?

What is the infrared camera used for?

What kind of packaging is used for the modules?



A useful link for some more explanations (but mono-crystalline cells):

<http://www.solarworld-usa.com/solar-for-home/solar-101/making-solar-panels/crystal-growing.aspx>