NAREWAMA

Natural Resources and Waste Management Alliance

"waste no waste"

The behaviour of steam inside a vacuum evacuated tube

As soon as the pot is hotter than the boiling point and the water is above 60°C, small bubbles of steam appear on the bottom.

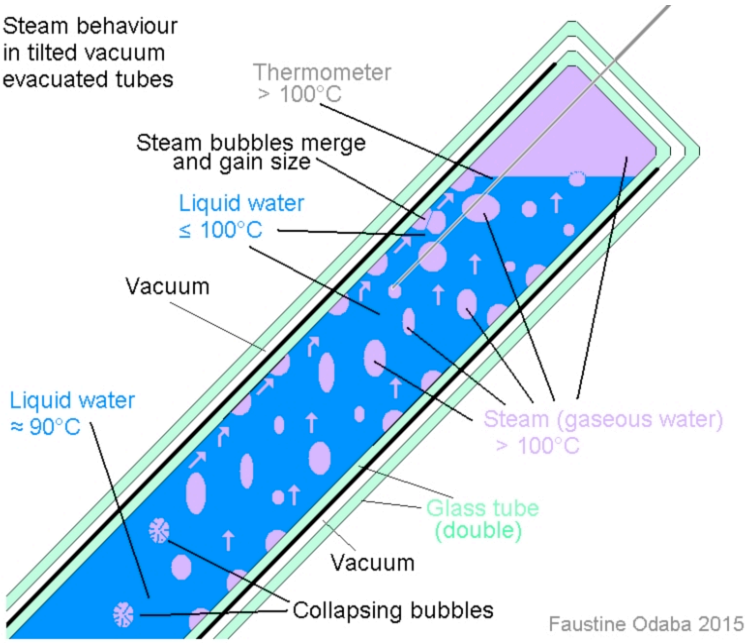
Added energy increases the size of the bubbles. They are released, move up and collapse on the way through the colder water, making the typical noise.

As soon as the water comes to boiling point temperature (100°C at sea level) the bubbles don't collapse anymore. They move all the way to the surface where they burst and release the containing steam to the environment.

Since vacuum evacuated tubes are tilted and have a smaller surface, the steam behaves differently.

In a vacuum evacuated tube the steam bubbles move to the upper part of the glass where they slide up to the surface, merge and gain size.

Unlike in a regular pot, the surface is smaller than the steam bubbles producing area. This causes a vigorous movement as soon as the large bubbles appear on the surface and burst. **In rare cases it has been observed, that a large bubble catapulted a hot water graft out of the tube.**



Please consider this particular behaviour, especially when you apply vacuum tubes with a small diameter, to avoid scaldings.

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More than 25 years experience in solar cooking and solar food processing.

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