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https://www.apraktika.hu/en/DIY-Vacuum-Tool-for-Degassing-Resin

### Vacuum Degassing Pump to remove of air bubbles from resins

#### Instructions for use

#### 1. Brief Description:

It is well known that manual mixing of materials under atmospheric pressure generates air bubbles in the resin.

From most of slowly hardening epoxy resins the bubbles remove spontaneously.

However, they can also get stuck in the mould if there is undercut(s). Therefore it is useful to exempt the mixed resin before.

One way is to use vacuum chamber.

Establishing vacuum with a manual pump is about 60-70%, which is 0.065 MPa compared to 0.1 MPa atmospheric pressure.



#### 2. Operation:

The vacuum pump is offered originally for food and drink storage. It exempt the air and so the oxigen from jars effectively keeping the food fresh longer.

The bubble-removing effect is based on the fact that under vacuum or low pressure the air bubbles escape faster.

The process depends on the vacuum extent, the viscosity, density of the resin and many other environmental conditions too.

# 2.1 What kind of "chamber" can you use to create a vacuum?

Any mason jar is suitable for vacuuming.

The smaller its volume, the more efficiently and faster you can create the required vacuum.





Place the mixed resin in a plastic cap that fits into the given mason jar.

We recommend you to apply a flat and relatively wide cap and a convebient low-height jar.

This way the mixed resin fills the sam volume at a lower height.





That allows the bubbles to make a smaller distance to the surface and so to be destroyed.

In place of glass container you can also use a small airtight food container made of polypropylene. It has the advantage that no resins adhers to it at all, so that can be used for several times.

But you need to drill a small hole on top of these for the vacuum valve.





#### 2.2 How long to pump?

Actually, the pump removes a certain amount of air at every cycle, so the pressure always drops.

However, there is a reasonable limit to the achievable vacuum as pressure keeps dropping less and less.

For a 200-300 cm3 container, 10-20 tacts may be sufficient.

## 2.3 How to terminate the vacuum and avoid the resin to splash around?

Terminate the vacuum simply by lifting the valve manually.

Be careful: if do it all of a sudden, the resin will splash out. This can be dangerous to your health and the resin becomes out of action.

Therefore, lift the valve carefully and gradually!



Alternatively, using a low-cost flat shape polypropylene sauce container with a lid will prevent this failure.

Just make a small hole in the lid as you see in picture above to ensure pressure equalization.