

Optimum fill volume for the TPP Bioreactor 600

TPP bioreactors are suitable for use as cell culture flasks for all suspension cells. The bioreactors come in two different sizes: Bioreactor 50 and Bioreactor 600. The bioreactor product family offers maximum flexibility for the user when taking samples, changing media or for parallel experiments.

The Bioreactor 600 is particularly suitable for up-scaling suspension cells and for small production. Optimum gas exchange is possible if the bioreactor is shaken during the production. The optimum rotational speeds for the different fill volumes are given below.

1 Bioreactor 600 details

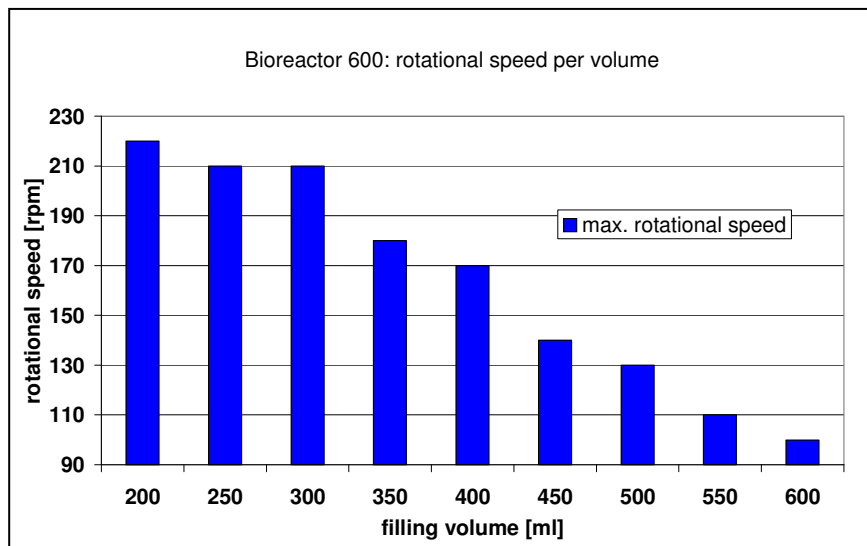
The Bioreactor 600 (cat. no. P 87600) has a gas-permeable, sterile PTFE filter screw cap with 10 apertures (diameter of the apertures 0.4 mm each). These apertures mean that the maximum exchange of oxygen, carbonic acid (and humidity) is adjustable. Depending on requirements, the apertures can be closed individually.

The working volume is 250 ml. Cultivation can be carried out at 37 °C in suitable shakers. Important for the harvest: The Bioreactor 600 fits into most 1000 ml benchtop centrifuges.

2 Rotational speeds depending on the different fill volumes

The following maximum rotational speeds have been determined for the Bioreactor 600 per fill volume (cf. Fig. 1 and Tab. 1).

Tab.1: Maximum rotational speeds for the different fill volumes and Bioreactor 600



Medium quantities up to 400 ml can therefore be shaken at 170 - 200 revolutions per minute. So a sufficiently large surface area is generated in order to guarantee optimum gas introduction. In the case of larger volumes - and hence fewer revolutions - both surface area and mixing of the medium are reduced. Optimum gas introduction can no longer be guaranteed.

Recommendation: The maximum effective volume of the Bioreactor 600 for the cultivation of suspension cells is 400 ml.

3 Material information

Cap

- Raw material: Polyethylene (PE)
- Heat resistance:
 - Short-term maximum load:
80-100 °C
 - Cannot be autoclaved
- Low temperature resistance:
-40 °C
- Optical properties:
Translucent to opaque
- USP Class 6

Container

- Raw material: Polypropylene (PP)
- Heat resistance:
 - Short-term maximum load:
120-140 °C
 - Autoclavable
- Low temperature resistance:
-190
- Optical properties:
Translucent
shiny surface
- USP Class 6

Fig. 2: The bioactor family from TPP

