

# Product Information

## VACUETTE® SECONDARY Tubes

### Freezing and thawing of tubes

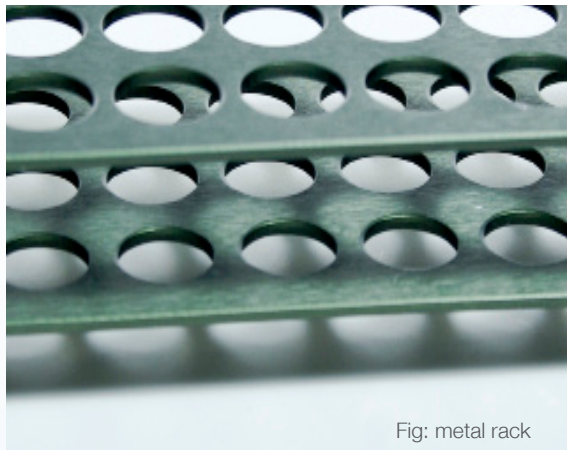


Fig: metal rack

#### Tubes should be stored upright in an open rack

Blood freezes very rapidly (90-95% water) and the supernatant serum, plasma and also urine freeze even faster.

The freezing process starts at the outside and goes towards the centre of the tube. When ice crystals form, the complete serum/ plasma/ urine sample expands. It is therefore very important that cool, open metal racks are used to allow for a gentle and consistent freezing.

The volume inside the tubes should not be more than 3ml.

It is recommended that users validate their own freezing protocol\*.

#### Procedure\*

##### Refrigerating of samples

It is recommended to put the tubes into the refrigerator for at least 2 hours prior to freezing to avoid a too rapid drop in temperature during the freezing process.

The tubes can be closed with **VACUETTE®** Safety Screw Caps.

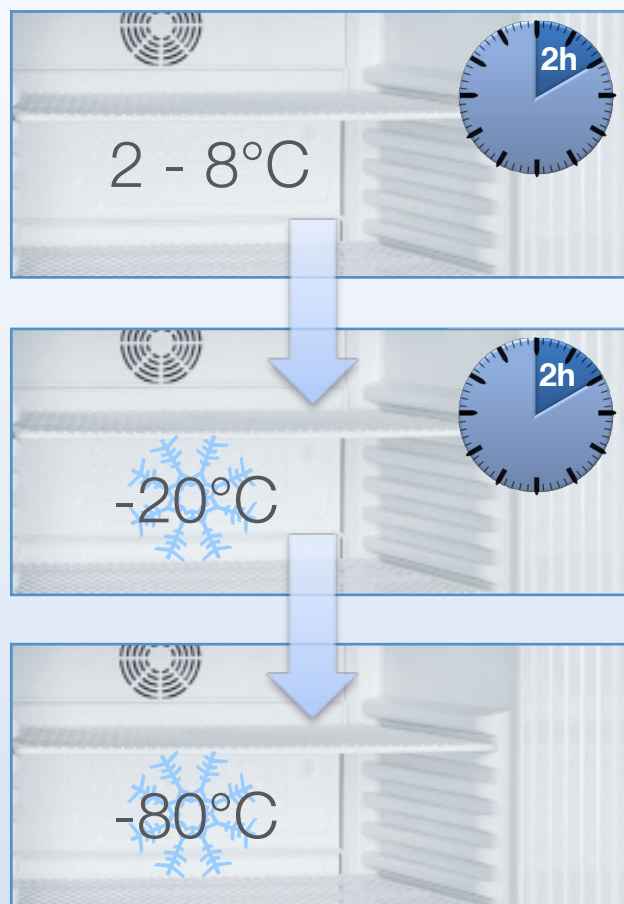
##### Freezing of samples

When the samples are cooled down they can be transferred to the freezer at -20°C.

They can remain at this temperature or be transferred to -80°C after storage for 2 hours at -20°C.

##### Thawing of samples

Samples should preferably be thawed in the refrigerator over night or at room temperature.



\* depending on the used sample, refrigerators and freezers, it might be necessary to adjust the process.