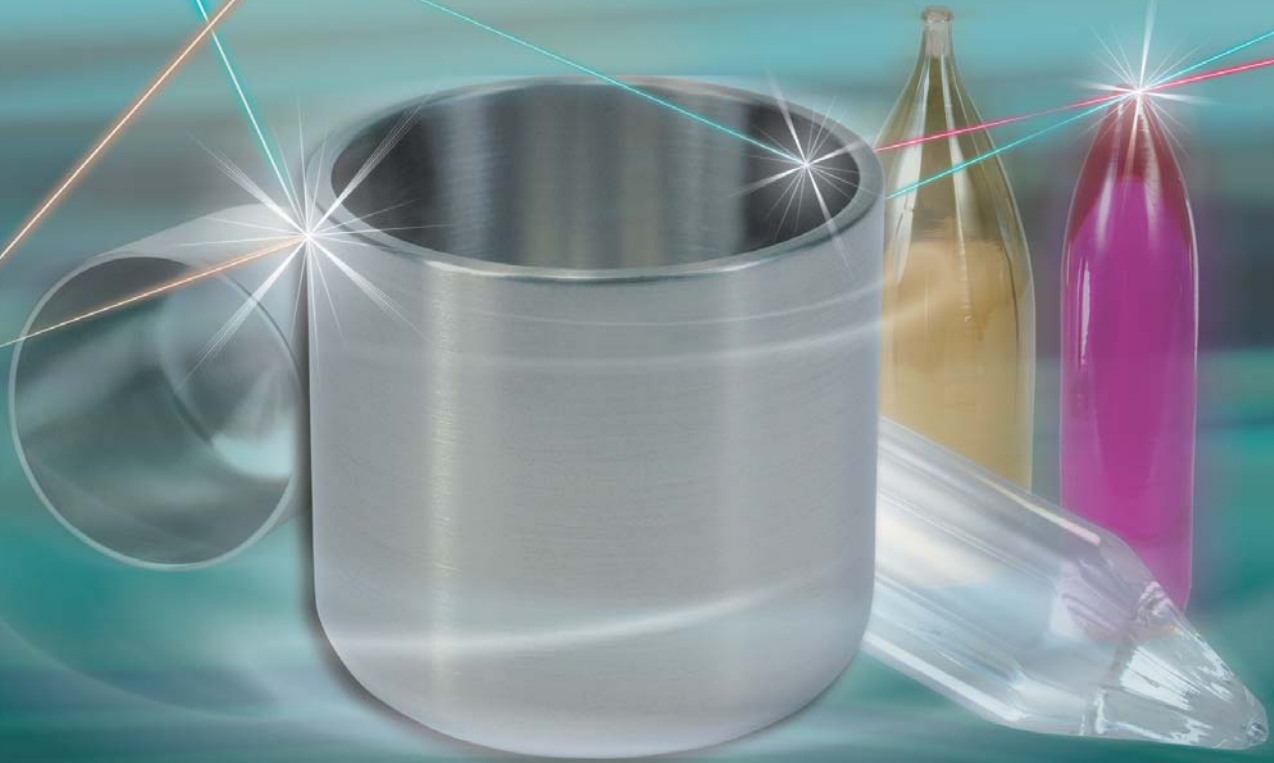


## Crucibles for Single Crystal Growing



Only non-alloyed, very pure materials such as platinum, iridium, gold and rhenium can be used for growing single crystals from oxide melts. The crucible shape is generally cylindrical. The melting temperature, the atmosphere and the constituents of the melt determine the choice of material.

For this reason iridium crucibles are used at temperatures up to approx. 2300° C for growing crystals of high melting oxides (e.g. sapphire, spinell) for laser technology and the optical industry.

The use of precious metals is limited to the Czochralski and Bridgman-Stockbarger processes and the crystallisation from hydrothermal solutions. While gold and platinum are suitable for oxidising atmospheres, iridium should, if possible, only be used under inert conditions because

the iridium oxides evaporate and can lead to considerable loss in weight.

Under reducing conditions harmful constituents of the melt can result in damage to the iridium crucible.

Heraeus' experience of many years with this material, which is particularly difficult to process, enables us to offer our customers a consistently homogeneous material quality in a wide variety of crucible diameters and heights.

Crucibles are manufactured in seamless and in welded designs.

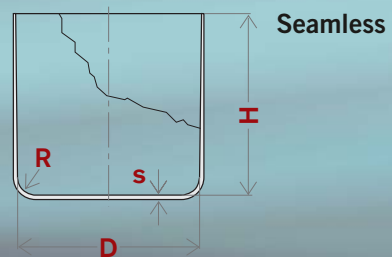
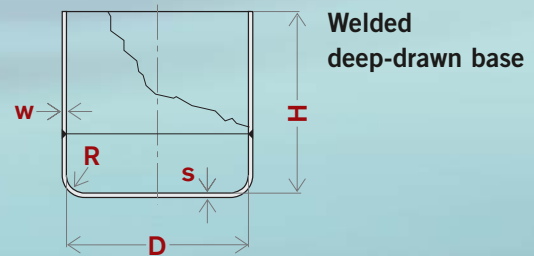
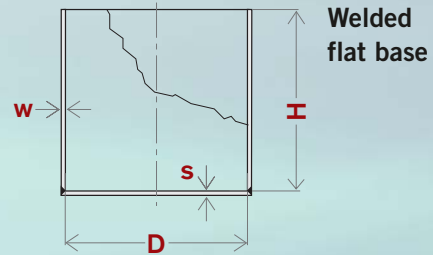
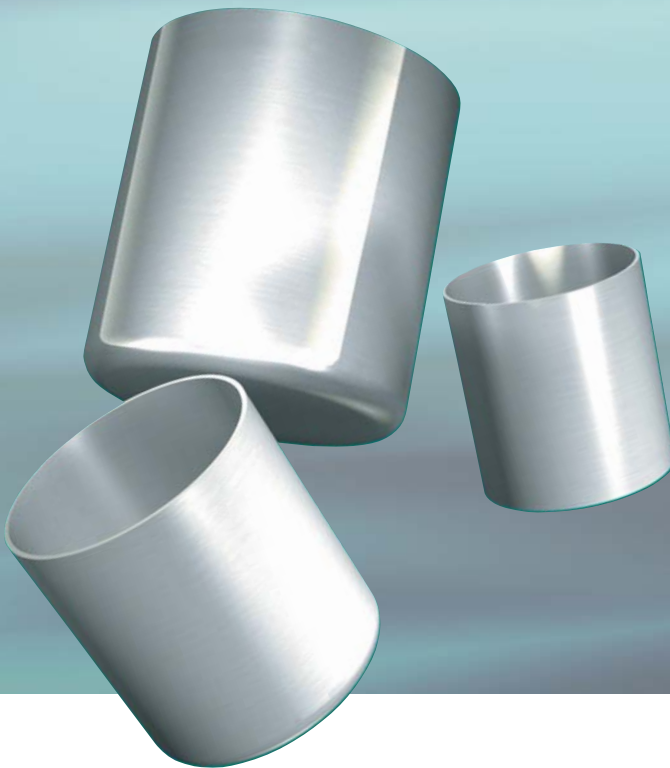
Our Platinum DPH material has proved itself particularly for crystal growing in oxidising atmospheres due to its higher strength and temperature resistance.

You can obtain the cylindrical crucibles in a variety of dimensions (diameter, height and base thickness).

Tell us your intended application and you will receive a tailor-made crucible corresponding to your requirements, in all common alloy variations or in our DPH materials.

We will be delighted to produce other forms and geometries on request.

Besides cylindrical crucibles, we also offer conical crucibles with straight walls in iridium.



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