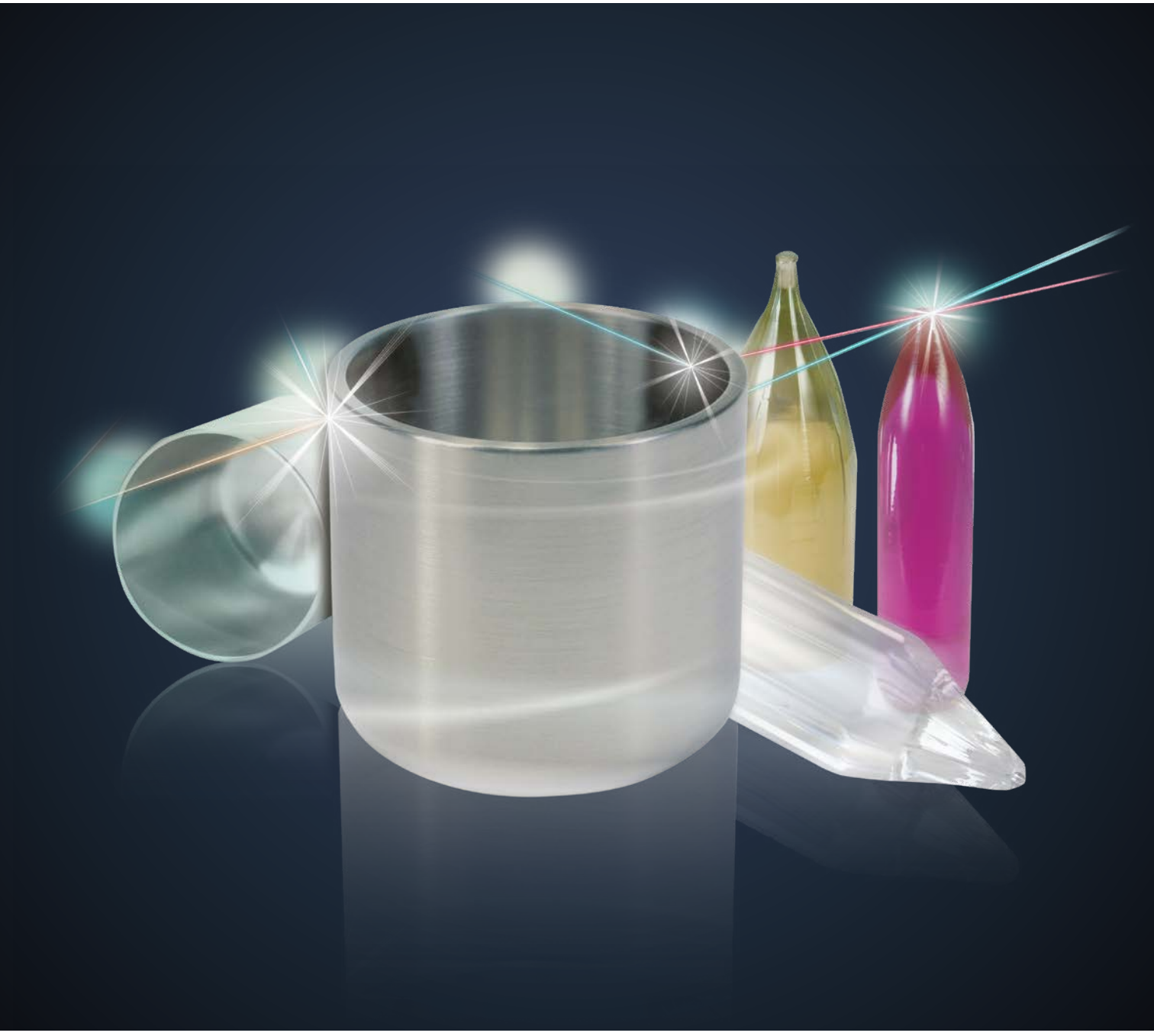
Heraeus

Precious Metals



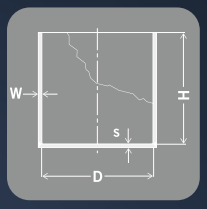
Crucibles for Single Crystal Growth

Cylindrical crucibles are available in a variety of dimensions.

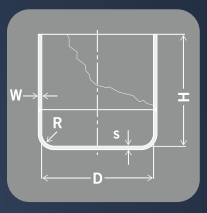
Based on the intended application, a tailor-made crucible can be produced to meet specific requirements. Diameter, hight and thickness can be customized in all common alloy variations and DPH materials.

Other forms and geometries can also be fabricated on request.

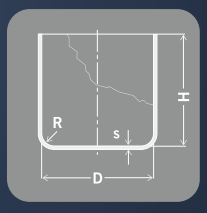




Welded flat base



Welded deep-drawn base



Seamless

Only highly pure materials such as platinum, iridium, gold and rhenium can be used to grow single crystals from oxide melts. The crucible shape is generally cylindrical. The melting temperature, the atmosphere and the composition of the melt determine the choice of material.

For this reason iridium crucibles are used at temperatures of up to approximately 2300° C to grow crystals with high-melting temperatures, such as sapphire and YAG, for laser technology and the optical industry.

In the crystal growing industry, precious metal crucibles, primarily platinum, platinum alloys, and iridium, are essential for melting high-purity oxide materials. Their high melting points, mechanical strength, and chemical inertness ensure the melt remains uncontaminated during high-temperature crystallization processes like the Czochralski (CZ) and Bridgman-Stockbarger methods.

Many years of Heraeus' experience with this particularly difficult-to-process material enable a consistently homogeneous material quality to be offered in a wide variety of crucible diameters and heights.

Crucibles are fabricated in seamless and welded designs.

Heraeus' Platinum DPH (oxide dispersion stabilized) materials have proved particularly suitable for crystal growing in oxidizing atmospheres due to its higher strength and temperature resistance.

In selected applications, Heraeus Platinum DPH Strong crucibles can achieve crystal growth performance comparable to Iridium-based solutions while requiring significantly lower precious metal investment.