

ABOUT CRYSTAL

experience the sheer
beauty of crystal.



materials

Crystal glass manufacturing goes back more than 2000 years but only in the 17th century the true lead crystal was introduced and soon became a new art form and a luxury staple in the hands of skilled artisans and crafters. There is a fundamental difference between simple glass and crystal: although glass and crystal share the same main compound, silica (whose most common form is the sand), crystal replaces lime with lead oxide, so imparting a very high refractive index, clarity, strength and workability that simple glass could never reach.

Especially when transparency is important (which is the case for quality wine tasting goblets that must allow the colour to emerge with the least light interferences as possible) crystal has an undisputed advantage over any other type of glass.

Placing a crystal glass next to a common glass stem, especially under a source of light, will help to visualize what a difference lead really makes in terms of brightness, purity and light reflection.

Lead also improves the glass structural strength and, by conferring a lower melting point to silica and more stability to the molten glass during the forming phase, allows more versatility and creative space to design and crafting.

When the main objective is to enhance clarity and purity of design, the best crystal is undoubtedly the one containing 24% lead.

A high lead content has however few downsides: it makes the glass fairly heavy, more rigid and weaker under condition of sharp and sudden variations of temperature.

It is possible to find crystals with decreasing content of lead, sometimes as low as 5%: in this case the crystal is commonly called 'crystalline', typically 9% leaded. When the content of lead is reduced, strength and clarity are correspondingly reduced, although recent technological innovation in glass making have allowed to partially eliminate this adverse factor.

For example better combination of stabilizers are employed and the structure is 'reinforced' by innovative alloys that make the crystalline more resistant than it would be otherwise.

Glassware with a good level of clarity and strength can therefore be obtained, being at the same time lighter and more durable.

A better crystal formulation can also reduce the thickness of the glass, without reducing its strength and tensile resistance and the use of different 'fluxes' (compounds, like potash or soda, added to the Silica to lower its melting temperature) permits easier conditions of glass working and hence more degree of liberty in shape, form and design.

The quality and refinement of the crystal main forming element (silica) is also very important to give the right transparency and uniformity to the glass. Being Silica extracted from sand, a complete and thorough removal of all impurities is a precondition for the final product to conform to acceptable standards.

The overall crystal formulation is often one of the best-kept secrets of high quality crystal glass manufactures.

glass making

The final quality of the glassware is also determined by the different types of glass working processes followed, by the efficiency of the equipment used and by the skills of the artisans and operators involved.

Glass can be manufactured entirely by hand, literally one unit at the time according to the 'Traditional Method', or almost entirely by automatic machine assisted processes, in large batches and at a fast pace.

Glass can be pressed, extruded, blown, moulded, cased as well as cut by a machine or by hand and finished and polished at different degrees of precision and smoothness.

Not all machined glass and crystal are the same: the best ones are obtained thanks to highly calibrated equipment and through continuous, slow line operations that guarantee a final product without any joints and with an optimal weight/thickness ratio. Poor quality machine-made glass, considerably more economical and typically manufactured in very large batches, may instead show one, two or sometimes three junction points and visible roughness and cloudiness of the surfaces.

When crystal is hand-blown and hand cut, the ability of the blower is of paramount importance. In fact the difficulty to preserve the traditional skills of glass hand making is one of the main reasons of the limited number of companies still offering a true hand-made and mouth blown product.

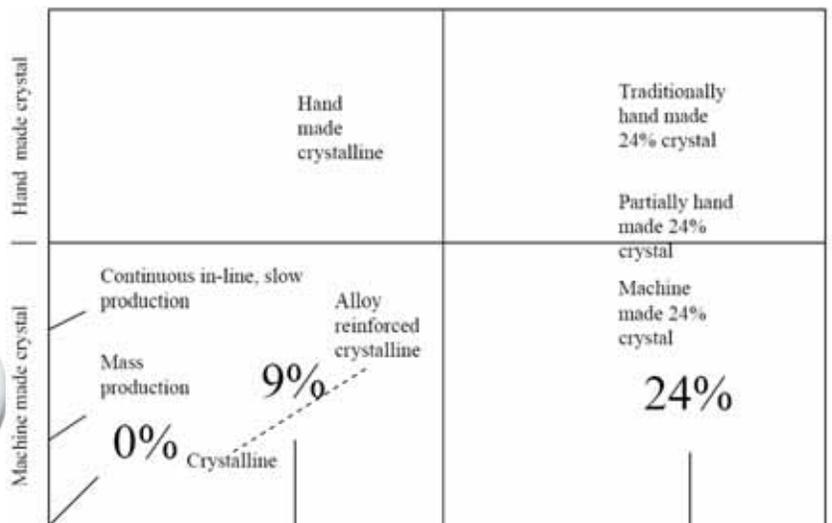
These skills allow the crystal to assume shapes and forms which would be unattainable by even the best machine process: the master blower gathers the molten from the melting oven with an iron blowpipe and then creates shapes and forms literally by means of his skill or by blowing the molten into a rough mould, and then, by rotating the rod and precisely calibrating its moves, brings the glass to the desired form. After cooling, the blank is ready to be refined, cut, polished and finished.

Each piece of crystal made by hand is therefore unique and its minor imperfections (like the micro bubbles of air sometimes trapped in the crystal) are like beauty marks, unmistakable sign of the human ingenuity and dexterity.

Unfortunately no commonly accepted definition of crystal has been yet implemented on the market place, sometimes allowing poor quality products 'smartly marketed' to prevail over products whose superb quality and refinement would deserve a wider audience.



the crystal matrix



Lead content from simple glass (0%) to pure 24% lead crystal