

# Questions and Answers

## Q. What is Crystal?

- A. Natural mountain crystal, which is found in the hollows of rock formations, is a semi-precious stone of great hardness. A very poor heat conductor, it's constantly cool to the touch. Because of this property, and the stone's visual resemblance to ice, it was called "crystal" after a Greek word meaning ice. The crystal we find in the gift and tableware market is glassware, called crystal because of its clarity, fine quality and high refractive power. Lead oxide is often added to the original ingredients of silica sand, potash and cullet although some products, justifiably called crystal for their purity and beauty, do not necessarily have to contain lead oxide.

## Q. What is Lead Crystal?

- A. Lead crystal is the term used for glass that combines silica, potash, cullet and lead oxide. The lead content softens the glass and makes it easier to cut. At the same time the product becomes more sensitive to light and acquires its characteristic and inimitable sparkle.

## Q. What is Kaliglass?

- A. Kaliglass is the term given to glassware to which lead oxide has not been added. This glassware usually doesn't go through the cutting stage in production, although many of the market's finest glassware lines are kaliglass.

## Q. What bearing does 10, 15, 24 and 30 percent lead content have on the finished product?

- A. Research and experience have shown that 24 percent lead oxide is a good percentage for cut crystal, although many cutters prefer 18 percent so that the product does not become too soft and 'dust' under the cutters wheel. The fact that a product has more than 24 percent lead

content does not mean it is of superior quality. To the contrary, it may chip more easily and may acquire a bluish tinge in time.

## Q. What is pressed crystal and what is cut crystal?

- A. Pressed crystal has the 'cut pattern' introduced by pressing it into the glass while the product is still in a near molten state. Over-cut crystal is 'pressed crystal' which has received its details and finishing touches from a master cutter who is a hand craftsman.

## Q. What is overlay

- A. Overlay is the word used when two colours of glass appear in the product. The colours are blown inside a red glass goblet, parts of the red would be cut away to expose the blue underneath.

## Q. What is high enamel?

- A. This is a time consuming and expensive method of decoration which means that decoration, usually floral, is hand applied to the surface of the glass in increasing layers. The product must be re-fired between each layer.

## Q. What is the melting point for crystal?

- A. Lead crystal melts at 1,100 to 1,200°C and is workable at 400 to 600°C. For kaliglass (non-lead) the melting point is slightly higher.

## Q. How much time does a glass blower require to produce the basic product before it is cooled?

- A. Depending on the piece, the time can be as little as 45 seconds or as much as five minutes.

## Q. What happens to broken or defective pieces?

- A. They are remelted and become 'cullet'.

## Q. What is Barium Glass?

- A. This is kaliglass to which barium oxide has been added, making the product more brilliant in clarity but less elastic for cutting.

## Q. Does the delicate ring produced by tapping a piece of crystal identify quality?

- A. Not at all. The sound is created from a variety of things; size, shape, thickness, etc. Even similar pieces can have a different ring.

## Q. What methods of polishing crystal are used?

- A. Crystal can be polished by means of acid, or by wheels. The wheels are soft wood or, when available cork.

## Q. Why is rich cutting so expensive?

- A. The price is based solely on time and skill. Lead content has little bearing on price. Some highly decorative pieces may take 25-30 hours to cut, absorbing as many as 8,000 to 10,000 cuts.

## Q. How is engraving achieved?

- A. Engraving can be done by hand using a small copper engraving wheel, or by means of automation. In the latter process a magnetic tape transfers the pattern to a computer which in turn engraves the product using a diamond cutting ball. Automated cutting can accommodate up to 10 glasses at a time very quickly.

## Q. What are the most difficult pieces to produce?

- A. In lead crystal they include wine and liqueur decanters with handles. Baskets are also difficult as are jugs which require great skill to perfect their shape. In stemware the hardest part of production is the stem and the foot.

## Q. How are colours introduced?

- A. They're the result of the addition of different oxides to the basic ingredients. Gold or chrome will produce red. Iron produces green. Cobalt produces blue, and uranium creates a yellow tinge.

## Q. When was present-day lead crystal discovered?

- A. Lead crystal was discovered in England approximately 300 years ago and was perfected in Bohemia to the quality known as Bohemian crystal 250 years ago, at the end of the 16th century. Czechoslovakian glassmakers were responsible for refining lead crystal to the superior quality it enjoys today. They also developed cutting and engraving as decoration.

## Q. How old is the Czechoslovakian glass industry itself?

- A. Domestic glass was made as early as 600 years ago, but raw glass dates back more than 1,000 years.

## Q. How many factories in the Czech republic produce today's products

- A. There are 57 factories producing domestic products but almost 200 more technical and laboratory glass, chandeliers, window and plate glass.