

## Bone China

- Stronger than hard-paste porcelain and easier to manufacture.
- Its ivory white appearance is created by adding bone ash to the ingredients for hard-paste porcelain.
- There are three types of porcelain: Hard-paste, Soft-paste, Bone china

Bone China is a hybrid hard-paste porcelain containing bone ash.

The initial development of bone china is attributed to Josiah Spode, who introduced it around 1800.

The original basic formula of six parts bone ash, four parts china stone, and three and a half parts china clay remains the standard English body.

Hard porcelain is strong but chips fairly easily and, unless specially treated, is usually tinged with blue or gray.

Bone china is easier to manufacture, is strong, does not chip easily, and has an ivory-white appearance.

Very soon the bone china was copied by Minton, Coalport, Davenport, Derby, Worcester, and the Herculaneum factory at Liverpool.

Later on it was used by New Hall in 1810, Wedgwood in 1812, and Rockingham in 1820.

The quality, as much as form and decoration, varied from factory to factory; some tended, after about 1820,

toward brilliant colour, lavish gilding, and overcrowded design; others produced tasteful, simply ornamented

tableware. Since much early bone china was issued unmarked, it is often difficult to attribute the pieces.

Bone china is extremely hard, intensely white and will allow light to pass through it.

Strength is provided by the fusion of body ingredients during firing. This unique English pottery body is made from the following: 50% animal bone, 25% china clay, 25% china stone. First or biscuit firing 1200 C -1300 C. Second or glaze firing 1050 C -1100 C.

Porcelaneous ware was first made in China, hence its common name china. Chinese porcelain is less vitrified (and therefore softer) than its modern European counterpart, which was developed in Germany in the early 18th century.

Josiah Spode II (1754-1827) introduced in his new bone china pottery in c1797. This was to prove the English solution to the quest for porcelain. Technically bone china is a form of hard paste porcelain because it is a mixture of clay and another non-glassy material. The standard formula is 25% china clay, 25% Cornish stone, 50% bone ash. Bone china became the English porcelain because - It is less liable to loss in firing than soft paste porcelains which contain glass. The firing temperature is much lower (1250° C) than for hard paste porcelain (1400° C). The potters could use their existing methods and ovens. The brilliance of enamel colours and gold was greater than on other porcelains.

It very quickly became a popular body for several reasons - The diminishing trade with China caused by very heavy import duties on porcelain (108% in 1795), Less merchant shipping

available because of the need to sustain naval and military forces overseas. The patronage of the Prince of Wales, leader of taste at the beginning of the nineteenth century. The growth of the professional and merchant classes provided a market, it was easy for existing factories to convert to making bone china because the sequence of processes as well as the glaze and enamel firing temperatures were the same as earthenware. Bone china is more difficult to use in a plastic state than earthenwares, but quicker to cast with than earthenwares.

### **Calcined bone ash:**

Calcined bone ash is used in the production of bone china and makes up about 50% by weight of the final body recipe. It is produced from animal bone, which is first processed to remove any adhering meat which is generally sold as pet food. The bone is then treated to remove glue, which is processed and upgraded for use in normal applications where glue is used, and also for the sizing of expensive paper. The raw bone which is left after the meat and glue have been extracted is then heated to about 1000 C at which temperature any residual organic material is burned off and the structure of the bone is changed to form suitable for the manufacture of bone china. The high temperature used also sterilises the bone. Prior to use the bone is finely ground with water before inclusion in the bone china body and it is calcined bone which gives traditional English bone china its translucency and whiteness.

### **Chinese Ceramic**

Pottery, porcelain and ceramics are three easily confused terms to describe the earthenware production in China. Therefore, it seems necessary to give you some explanations before we arrive at the Liulichang Cultural Street in Beijing.

China is famous for its china - porcelain wares. Chinese porcelain wares were and are exported to many nations and acquire high appraisalment.

Porcelain also experienced a long history in China. During the Shang and Zhou dynasties, primitive porcelain wares emerged in the middle and lower reaches of Yangtze River and the Yellow River. Real porcelain wares appeared in the Han dynasty. In the process of porcelain development, different styles in different periods blossomed.

From the Han dynasty, celadon porcelain and black porcelain were mainly produced. Celadon porcelain continued to develop during the later dynasties. In the late Tang dynasty, celadon porcelain production techniques matured and were manufactured in large scale. At the same time, white porcelain, which appeared in the later Northern and Southern dynasty, reached its peak too. White porcelain, mainly produced in Xing Kiln in Hebei province, sounds like musical instruments when tapped.

The Song dynasty, the most important dynasty in Chinese porcelain history, brought prosperity in porcelain production and appreciation. There were many famous kilns, and Ru Kiln, Jun Kiln, Guan Kiln, Ge Kiln and Ding Kiln were the top five among them. Ru Kiln produced creamy porcelain wares while Jun Kiln produced rosy porcelain wares red as sunset glow. Ge Kiln was specialized in artificial crackly wares. Among them, the most famous were Ru Kiln wares. The fine and delicate Ru wares which used special glaze with camelian added. The Ru wares basically had four kinds of glaze according to color, namely azure, sapphire, moon white and turquoise. It was very difficult to control the firing temperature and glaze prescription. Since the production of Ru ware lasted only 20 years, Ru wares are so rare that only about 70 pieces are found nowadays in the world. In a word, in the Song dynasty, porcelain production and techniques reached an unprecedented height.

During the Yuan dynasty, porcelain industry continued its rapid development. Blue and white porcelain, which emerged in the Tang and Song dynasties, reached its maturity. The blue and white ware was painted with power blue under transparent glaze. So the colour was perfectly

protected under the hard glaze, enabling long-term use and reserve. Among those kilns, Jingdezhen kiln made breakthrough in techniques. It remodeled material prescription and improved firing temperature, hence facilitated producing large wares. Second, blue and white wares and red-under-glaze wares were successfully produced and rapidly matured, to mark that combination of Chinese painting and porcelain production reached maturity and colour-under-glaze porcelain wares developed to a record high. Third, great achievement was made in the producing of colorant glaze. Before the Yuan dynasty, people had few colour choice.

In the Ming dynasty, blue and white porcelain wares became the main stream of porcelain production. Blue and white ware stepped into its golden era during the Yongle, Xuande and Chenghua reigns. Delicate and thick glaze, various patterns and affluent models are basic features of the Yongle and Xuande porcelain wares. Chenghua wares were delicate and lighted colored, with Chinese ink wash painting flavor. In the late Ming dynasty, blue and white porcelain met another surge during the reigns of Jiajing, Longqing and Wanli.

In the Qing dynasty, blue and white made a great leap forward to radiate its worldwide influence. Among the Qing porcelain wares, those produced in the reigns of Kangxi, Yongzheng and Qianlong are the most famous,