

### **Cast iron pot with sand holes and repair method**

What's wrong with iron pot trachoma?

Trachoma is a common problem in iron pots. Trachoma is a small hole that appears on the surface of an iron pot, with varying sizes ranging from needle tips to rice grains.

From the perspective of production process, iron pots are generally produced through casting technology. During the casting process, if the fluidity of the molten iron is poor and cannot evenly fill various parts of the mold, it is easy to leave gaps on the surface of the iron pot after forming, which will appear as sand holes. For example, when the temperature of the molten iron is not high enough, its fluidity will deteriorate. Under normal circumstances, the temperature of the molten iron needs to reach around 1300 °C -1500 °C to have good fluidity. If the temperature is only 1200 °C, it may lead to insufficient filling of the molten iron in the mold, resulting in sand holes.

The quality of raw materials also has an impact on whether iron pots produce sand holes. If the iron raw materials used in the production of iron pots have low purity and contain a lot of impurities, the impurities may affect the solidification process of the molten iron during the casting process. For example, when there are many impurities, the shrinkage of various parts of the molten iron during solidification is inconsistent, and small voids will appear in the areas that should be tightly bonded, eventually forming sand holes. According to statistics, the probability of sand holes occurring in iron pots produced using iron raw materials with a purity of 95% is about 30% lower than that produced using iron raw materials with a purity of 90%.

In addition, the condition of the mold cannot be ignored. If the mold itself is not smooth enough, or there are some small damages, residual sand particles, etc., then after the molten iron is poured into the mold, these defects of the mold may cause the surface of the iron pot to be uneven and sand holes to appear. For example, when there are slight protrusions or sand particles on the inner wall of the mold, the flow and solidification of molten iron in these areas will be disrupted, resulting in sand holes.

During the use of an iron pot, if it is subjected to severe collisions or falls, it may also cause damage to the internal structure of the pot, disrupting the originally tight arrangement of iron atoms and forming sand holes on the surface. A user once reported that they accidentally dropped an iron pot from the stove to the ground without noticing any issues. However, after using it for a period of time, they discovered some sand holes on the pot.

When storing iron pots in daily life, if the environment is too humid, the pots are prone to rusting. During the process of rust formation, the material structure of the iron pot may change, becoming loose, and sand holes may also appear. For example, if the iron pot is placed in an environment with a humidity of over 80% for a long time, the possibility of sand holes appearing in the iron pot will significantly increase after about a month.

The simplest remedies for the occurrence of sand holes in pots include filling with repair agents, boiling rice, using clay tablets and egg whites, and using raw lard clay. The following is a detailed explanation:

**Repair agent filling method:** Use a specialized iron pot repair agent and apply it to the sand hole according to the product instructions. After it solidifies, the sand hole is filled. This method is simple and fast, suitable for home use.

**Rice boiling method:** if the trachoma is small, you can put some rice into the pot and cook it for a

while like porridge. Rice releases starch during the boiling process, gradually blocking sand holes. This method uses common materials and is convenient and practical.

Sand pot slices+egg white method: Find a broken sand pot slice, grind it into a fine powder, and stir it with egg white to make a thick paste. Make a clay cake slightly larger than the pot hole, stick it on the hole, and then burn it on the fire for about two minutes. The clay and iron pot will become one. This method has a good repair effect and a sense of achievement.

Raw lard clay method: Prepare raw lard and clay, mash them into a paste, and directly apply it to the sand holes to smooth them out. This method becomes stronger as it is burned, and is suitable for repairing large sand holes in iron pots.