

Published based on [Cleaning Diamond Earrings Thoroughly](#)

Cleaning Diamond Earrings Thoroughly

You purchased a pair of beautiful, sparkling [diamond earrings](#) a few months ago. However, as you don them today, you notice that the earrings have lost their sparkle and lustre. But you remember you took extremely good care of them. You ensured not to get them dirtied. You washed them with mild soap and water diligently.

Well, it turns out that the jewellery is definitely grungy, but you can't spot the dirt. That's because it has developed into a fine film that hinders the light from getting through the diamond or reflecting from the stone. That film covers the metal also, which reduces the jewellery's reflective qualities. Tiny bits of dust and dirt cling to the microscopic pits in the metal setting and the diamond itself. In addition, after mixing with moisture, oil, and salts from your skin, the dirt has dried and crusted like cement. Obviously, it is impossible to remove all this gunk through diligent washing and brushing.

Fortunately, that dirt can easily be taken off through a high-tech technique called ultrasonic cleaning. Ultrasonic cleaning makes use of high frequency sound waves, usually in the 20 to 400 kilohertz range to clean your jewellery. Here's how ultrasonic cleaning works.

The item to be treated is put in a compartment in an ultrasonic cleaner. The compartment is then filled with an appropriate cleaning solution. Ordinary water can be used as a cleaning fluid, however, this is not quite effective due to the high surface tension of water. Thus, an aqueous or organic solution is utilized instead. The cleaning solution has surfactant ingredients that lessen surface tension, essentially making it "wetter" than water. The correct cleaning solution to be used depends on the piece being cleaned. Most cleaning formulas used for ultrasonic cleaning are warm, normally around 50 to 65 degrees Celsius. In medical applications, however, the fluid used is normally at a cooler temperature, not more than 38 degrees Celsius, to prevent protein molecules from coagulating.

The jewellery piece is placed in the liquid, suspended so it won't keep in contact the bottom of the chamber. That's because the areas of the jewellery that is not in contact with the fluid are not cleaned. Once the piece is secured, an ultrasonic transducer which is either built into the compartment or lowered into the cleaning solution is switched on. The transducer then produces ultrasonic sound waves that change in size in coordination with an electrical signal that is fluctuating at very high frequency.

This action produces compression waves in the cleaning solution which agitate, or "tear apart," the fluid. The agitating action, called cavitation, creates millions upon millions of microscopic voids or partial vacuum bubbles. As the bubbles attach themselves to the] jewellery piece, they collapse, or explode, with a big amount of pressure. Usually, the energy released from a collapsing bubble can sometimes reach 20,000 pounds per square inch! However, the bubbles are so small that it is impossible for the energy to damage the item. That explosive force is enough to clean and get rid of surface dirt and contaminants such as dust, oil, pigments, rust, grease, algae, polishing compound residue, and others.

The bubbles can also penetrate invisible holes, cracks, and recesses that can't be reached through normal brushing or polishing. In other models of ultrasonic cleaners, you can also adjust the frequency of the sound waves. The higher the frequency, the finer the cavitation bubbles, which let you to clean very tiny details.

Therefore, if you wish your diamond earrings and [engagement rings](#) to be cleaned completely, choose ultrasonic cleaning.

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