

## From cork oak tree to sustainable cork stoppers: THE DIAMANT PROCESS®

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Traditionally, corks come from cork oak trees, grown in forests in the west Mediterranean Coasts. Boiled, softened and cleaned, barks are flattened into sheets and hand-punched into cork pieces. Connected to that, is the cork natural variability. Every single piece of natural punched cork varies in terms of mechanical properties and performance. OTR (Oxygen Transfer Ratio) variation can also lead to different wine evolution from one bottle to the other. In addition to structural inconsistency, cork material can transmit potential taint producing wine off flavour. Too many wines end up infected with Tri-Chloro Anisole (TCA) – a chemical compound that has a distinctive aroma and taste that is the most common cause of negative ‘cork taint’.

In order to solve this major problem, in the 1990’s, the Oeno group started a scientific collaboration with the “Supercritical Fluids and Membranes Laboratory” in CEA in order to work on the idea of a sustainable cork stoppers guarantee as TCA-Free. Moreover, Oeno, through his subsidiary DIAM launched in 2005, planned to design a consistency technical cork combining cork granules, using the DIAMANT® process to clean the cork, and food contact compatible binder and microspheres. DIAM wanted to provide closures that are clean, structurally stable and mechanically strong.

The process, called DIAMANT® technology developed with CEA and co patented, extracts the volatile compounds of cork that can sensory harm wine. Essentially, slightly warm and intensely pressurised carbon dioxide washes out all of the light chemical impurities, including (critically) TCA. The cleaned cork is then mixed with microgranulated cork that have been ground and sieved to extract the woody part of cork that doesn’t bring technical advantage. Food contact compatible Microsphere plug the minute air spaces between the fragments of cork and a binder hold the cork together.

Since 2005, DIAM® is by far the industry leader, guaranteeing 100% TCA removal below any threshold. Today, more than 1.5 billion DIAM® are produced in 3 factories designed by NATEX in Spain and France and are used in the wine industry in more than 50 countries worldwide.