CORK SUPPLY

38 YEARS Redefining Quality Since 1981

Cork Supply was founded in 1981 by Jochen Michalski in Northern California's renowned wine region. In the three decades since, the company has expanded staff and operations around the globe (500+ employees worldwide and operations in 9 countries), delivering standard-setting quality products, service and expertise locally to wineries throughout the world's premier wine growing areas.

Our founding vision — to supply premium quality natural corks for the world's finest wines — has expanded with the needs of our customers. Today Cork Supply is one of the wine industry's largest providers of natural corks and is a leading natural cork supplier in North America.

Our company is dedicated to ensuring that the quality of our products and services remains the highest in the industry. We understand that our global and local business affects more than simply our direct employees and customers, and we carefully manage the impact Cork Supply has on individuals, local communities and society at large. Our commitment begins in the cork forests — with fair, safe and honest treatment of our growers and harvesters, and sustainable collaboration with the indigenous people, culture and resources of the region. It continues through our production and service processes and extends to our customers and consumers, who can depend on Cork Supply for products superior in quality, safety and performance, and sourced in an ethically, economically and ecologically sound manner.

Cork Supply is also engaged in ongoing company-wide discovery and implementation initiatives aimed at evaluating and improving our products and practices through research, self-assessments, validation, certification and investments. The LEAN philosophy principles are applied across all our units.

For more than three decades, Cork Supply has been leading the industry in research and innovation and is the first cork company to achieve these industry firsts:

Introduction of sensory analysis since 1984.

Use of gas chromatography with SPME (Solid Phase Micro Extraction) for detection of releasable TCA during all phases of production since 2000.

Introduction of the proprietary Innocork® TCA removal (volatile extraction) technology in 2007.

First-ever guaranteed taint-free natural corks under the **DS100** system since 2011.

First Portuguese cork company to produce a TCA-taint-free technical cork with low OTR (in 2016): **VINC**

The Montado

Cork Supply is proud of our heritage, and we remain committed to sustainable stewardship of the Mediterranean forests that produce our corks. For centuries, cork farmers have sustainably harvested the precious resources of their *montado* (cork forests), protecting what the World-Wide Fund for Nature, or WWF, has called "one of the finest examples of a system which perfectly balances the needs of both humans and nature." As well as caring for the forests themselves, Cork Supply is equally committed to equitable practices that safeguard the livelihood and culture of cork farmers and their families, while ensuring and supporting protections for endangered wildlife. This is especially critical because Portugal's montado supports one of the world's highest levels of forest biodiversity, including the highest diversity of plants found anywhere the world, millions of wintering birds, and endangered animal species.

Cork Forests

Cork trees (Quercus suber) come from the oak family. Cork wood is actually tree bark harvested from these trees. The trees from which Cork Supply corkwood is harvested are located in Portugal and Spain. The climates and ecosystems found in the Iberian Peninsula are ideal for cork forests.

Cork forests are closely monitored. Cork is a renewable resource that can be harvested repeatedly. The forests are regenerated with acorn selection, nursery stock development, and forest re-plantings. The forests are managed with nutrition and shrub control, soil management, and leaf analysis.

Cork Harvesting

From acorn to death, each cork tree has a lifespan of approximately 200 years. An adult tree is harvested for the first time between 25 and 30 years of age. The cork produced from the first and second harvests isn't ready to be used to produce wine closures. Only when the trees have reached maturity ("*amadia," or 3rd harvest*), around 43 years of age, is the cork ready for use in wine bottles. The tree bark regenerates once removed and is ready for harvesting again every 9 years.

Cork is harvested between mid-May and mid-August each year. Prior to harvest, the trees are sampled; the samples are analyzed to confirm sensory neutrality. Forests are carefully selected to ensure the best quality cork is purchased.

Cork Seasoning

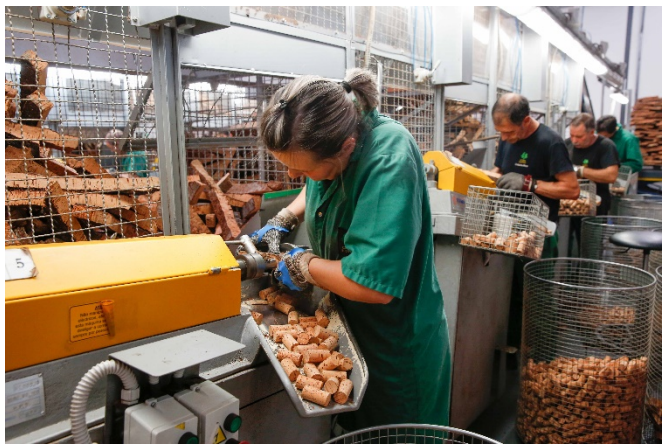
After harvesting, the bark (which is removed in large sheets) is brought back to a yard for seasoning. Seasoning involves laying out the bark and allowing the wood to be exposed to the elements. This helps to stabilize the structure of the wood, dry sap, clean the wood, and to achieve polyphenolic oxidation by way of UV rays (sunlight). Seasoning takes a minimum of six months following the harvest.

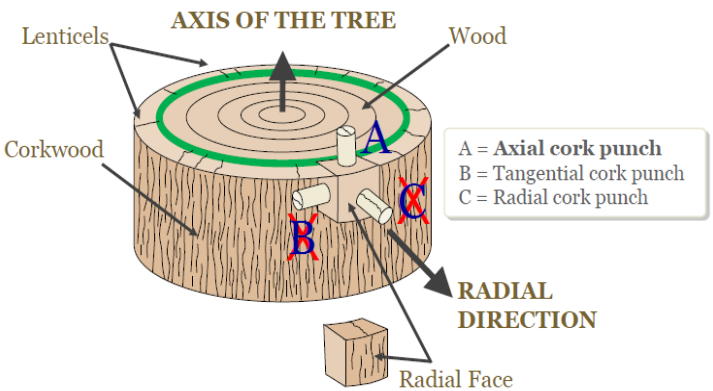
Once the cork has been adequately seasoned, the bark is brought to the factory for boiling. Boiling helps to flatten the cork planks, eliminate insects, and sterilize the cork. The process also helps to expand the cork wood cells, which increases the thickness and smoothness.

Once the cork planks have been boiled, they are sorted by thickness and visual grade. There are 5 qualities of bark – first, second, third, fourth, fifth. Only the first 4 grades are usable for cork production. This helps to remove visible defects and wood that isn't suitable for cork punching.

Cork Punching and Rectification

After the cork bark has been harvested and treated, the wood is cut into slices that correspond to the length of the corks produced. Each cork is then punched out of the wood using a cutting- edge tube. This helps to further separate out defects and allow for maximum yield and quality. Wood that is not suitable for cork punching will be ground up to make agglomerated corks, or thin cork discs will be punched from the wood.

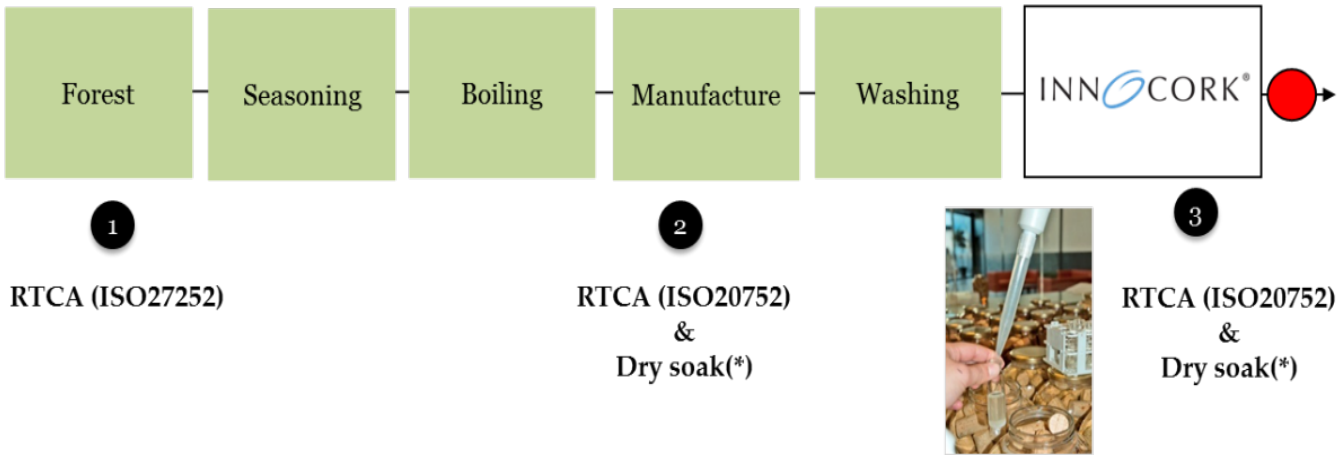




Once the corks have been punched, they are dried and rectified. Drying the cork helps to prevent fungal growth caused by moisture in the wood. The rectification process involves shaving the corks down to ensure that each cork meets the standard dimensions. Corks are shaved down to the proper diameter and the ends are cut to ensure they are the proper length.

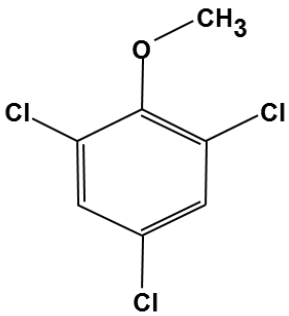
The corks are then washed using a hydrogen peroxide based cleaning solution. The process helps to eliminate cork dust (naturally occurring) and to disinfect each cork, while helping to remove additional off-aromas. The peroxide wash completely disinfects the corks and prepares them for food contact, such as wine. The washing and drying process does not damage the corks on a cellular level.

Corks are sorted according to visual grades. Reference samples are used to grade each quality level of cork and identify any critical defects that would affect their performance, potentially causing issues with wine in a bottle. Corks are sorted by hand and by machine (an image analysis of the cork surface) to ensure that the corks meet each reference sample's quality. The unfinished corks are then shipped to finishing plants located in strategic regions around the globe to ensure prompt delivery to customers.



About TCA

2,46-Trichloroanisole (TCA) is a naturally occurring chemical compound that can be found in many products. TCA is the main source of cork taint.

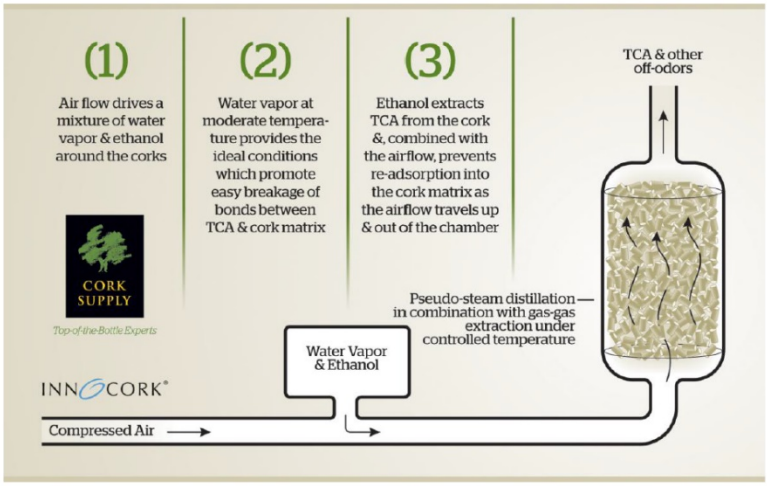


TCA is found in nature due to fungal activity. Certain types of fungus produce TCA to eliminate other compounds that impact their regular metabolic activity. It is not toxic nor has any hazardous impact on health, but the human nose is extremely sensitive to its presence and can detect concentrations as low as parts per trillion, or one drop in 400 Olympic-sized swimming pools!

At Cork Supply, through intense research and development, we have achieved a high level of quality control from forest to bottle, establishing state-of-the-art technologies to reduce potential taint in cork stopper lots.

INNOCORK ®

Innocork ® is an award-winning, patented TCA extraction process that 100% of our natural cork closures undergo. Innocork reduces the risk of cork taint and improves sensory uniformity of natural cork closures. The procedure uses a combination of water vapor, ethyl alcohol, and controlled temperature to volatize TCA molecules and other unwanted off-aromas from the cellular structure of the cork wood.



Innocork uses ethyl alcohol, which is a safe, natural agent that is common to wine. Using controlled conditions to maximize extraction and prevent re-absorption allows Innocork to mimic the natural organic chemistry that can occur inside of a wine bottle if releasable TCA were present in the bottle's cork.

Finishing the Corks to Send to Customers

Once the corks have been counted and sorted, they are printed. Based on the machinery available and the design requested, corks can be printed using several different methods. Corks can be printed along the body using either a laser printer or an ink printer; the ends can also be printed, using a fire brander or laser. Each printing method has (very) subtle differences, with some offering a more traditional "old world" look and others printed with crisp, clean lines. Cork Supply offers customers the ability to design their own corks, or work with Cork Supply to create artwork that most accurately represents the brand.

Once moisturized, corks are then treated with paraffin wax and silicone. The coating improves the way cork seals against glass and prepares them for bottling line conditions.

Corks are delivered to customers in ready-to-use condition in sealed bags (1,000 corks per bag) under a conditioning atmosphere with SO_2 (sulfur dioxide) to prevent microbial growth.

Our Certifications

HACCP – Hazard Analysis and Critical Control Points

Systecode CIPR – International Code of Cork Stopper Manufacturing Practices

FSC - Forest Stewardship Council

FSSC 22000 – Foundation of Food Safety Certification

Cork Closure Types

There are a variety of cork types available from Cork Supply. There is enormous variety in bottles and wine types, requiring a similar variety of cork types.

Natural cork: a single piece of cork, cut using a punch from a small strip of cork wood.

Colmated natural cork: similar to a natural cork, but 100% natural cork dust is used to fill the pores of the cork to improve visual quality.

Champagne cork: considered a technical cork, this cork has an agglomerated body with 1-3 natural cork discs attached to one end. Champagne corks have a larger diameter than standard closures.

Technical cork (1+1): 2 natural cork discs are affixed to the ends of an agglomerated cork body.

Micro granulated technical cork: an agglomerated cork body comprised of cork granules of a certain size.

CS Natural Cork

Cork Supply is committed to making the most of what Mother Nature gives us. We start with the finest cork wood and invest in state-of-the-art technologies at each stage of the process, from forest to bottle, to guarantee corks of the highest quality.

The CS Natural Cork, our premium selection, is extracted from top quality cork wood and undergoes our patented Innocork ® process that guarantees consistent sensory performance.

For most of the company's history we were solely dedicated to the production and distribution of corkwood closures, so we can confidently say that we are best-in-class when it comes to the quality of our natural cork closures.

Our Individually Guaranteed Products

VINC ® : Naturally Produced, Technically Perfected

A recent line of TCA taint free micro-agglomerated corks that offers a range of very low oxygen transfer rates. VINC technical corks are the result of the new, improved VAPEX process from the Cork Supply research and development team. VAPEX is a batch cleaning process that reduces TCA on cork granules through effective mass and heat transfer.

Vinc
Naturally Created,
Technically Perfected.

Cork Supply opened a technical cork facility in Portugal in 2016 to be able to offer taint free, best-in-class micro-agglomerated corks, produced from 100% of the company's own high quality raw cork materials. As Cork Supply integrates rigorous quality controls during harvesting and production of our natural corks, all remaining cork materials from that production are of very high quality.

The VINC family currently includes three different technical corks.

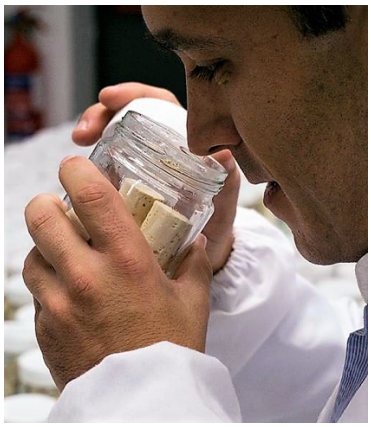
VAPEX is Cork Supply's disinfection process for granules that effectively extracts any potential TCA (2,4,6-trichloroanisole) molecules and other volatile composites by using pressurized steam. The granules are analyzed and disinfected by batch, providing the most effective and consistent treatment. The batch system ensures that only the cleanest quality neutral granules are used to produce our technical corks.

DS100 : 100% Inspected

DS100
100% Inspected

In 2011, a Cork Supply customer experiencing TCA issues on corks for large format bottles, (3L, 6L, 9L, and 12L bottles) approached the company with an interest in collaborating to find a solution, launching the DS100 service.

DS100 represents the term "dry soak, 100% inspection." The process is a non-destructive method of detecting TCA and off-aromas in cork. DS100 involves adding 200µl (microliters) of ultra-pure water to a small glass jar. Corks are then added to the jars and the lids secured on top. After a 24-hour waiting period, three technicians perform a sensory evaluation. If one technician rejects a jar for off-aroma, the cork is removed from the lot. The three technicians must approve each cork for the cork to be printed, moisturized, and treated for customer use.



DS100 is a labor-intensive process that requires 3 skilled technicians. During the interview process, each prospective specialist undergoes a 3-part screening process to determine their ability to detect TCA at low levels (at or below 1 part per trillion); this ability has been identified as a genetic characteristic (natural ability to detect TCA at low thresholds) and is further improved by intense training. Each technician sniffs the cork to detect TCA, often described as smelling damp, moldy, musty, or wet. Technicians are also trained to identify other off-aromas in corks and remove these corks from a specific lot.

DS100+ : Confidence in Every Cork

In recent years, cutting-edge technology has been developed to detect TCA in cork. In 2016, Cork Supply introduced DS100+, a proprietary system that uses advanced machinery to screen corks for TCA at less than 1ppt, well below sensory threshold. The new DS100+ technology produces natural corks with a non-detectable TCA guarantee* at a rate and value that will benefit an even wider range of customers.

The proprietary technology works in three steps: 1) releasing volatiles from cork, 2) then concentrating and isolating TCA from released volatiles to concentration levels that are then detected at step 3) with a highly sensitive and selective sensor for TCA.

We're very proud of the dedicated Cork Supply Research and Development team who conceived and tested these innovative principals, delivering a fully industrial compatible technology with the ability to measure volatiles at parts-per-trillion levels at production throughput.

*below or equal to 0.5 ng/L with AQL 0,65 between 0.5 – 1.0 ng/L

Bottle Buy-Back Guarantee (DS100, DS100+ and VINC Lines)

Cork Supply is extremely confident in the different TCA taint-free products lines we offer. Any customer who purchases DS100, DS100+ or VINC corks and has a bottle returned as tainted may send the bottle to Cork Supply. Laboratory technicians will test both the wine and the cork to determine if TCA is present and at what level. If Cork Supply finds the bottle and cork to have TCA present (greater than the specified limit for each product), Cork Supply will reimburse the winery for the retail price of the wine.