Presentation of our Environmental Policy

Our company, Diam Bouchage, develops, produces and markets cork-based technical closures to the highest possible standards of quality to satisfy customer expectations. We work with a natural material; cork derived from an ecosystem whose biodiversity and economic value are essential to the Mediterranean basin. During the cork’s transformation process and the manufacture of our DIAM, MYTIK and ALTOP closures, we implement highly innovative industrial processes such as the extraction of 2,4,6-Trichloroanisole (TCA) by means of a supercritical Co2 extraction process to guarantee the excellent quality of our finished products.

In order to continue our environmental policy initiated in 2007 to reduce the company’s carbon footprint, we decided, in 2009, to implement an environmental policy, seamlessly integrated into our Quality & Food Safety management system that has been in operation on all our manufacturing sites for several years now. Thus, beyond compliance with environmental regulations, we strive to prevent pollution and to continuously improve the performance of our manufacturing sites and our products throughout their entire life-cycle.

As part of this environmental policy, we are committed to implementing human, technical and financial resources that enable:

1. the control of our energy consumption and our Greenhouse Gas Emissions;
2. the recycling of our cork by-products and waste as effectively as possible;
3. the control and minimisation of the industrial risks within our technical facilities;
4. the carrying out of research and development studies to ensure our products, and future products, are environmentally friendly.

The implementation of this policy, which applies to the sites in San Vicente de Alcantara, Céret and Cumières, will ensure that our Division is recognised as a responsible actor in regard to the environmental challenges facing our society.

Highlight: a third DIAMANT plant

The highlight of 2014-2015 was the construction and subsequent start-up of the DIAMANT III plant at the Céret site in July 2015. This plant has benefited from technical developments above those found on the first two plants located at the Spanish site in San Vicente, with an optimisation of the CO2 cycle and energy consumption.
1. Control of our Energy Consumption and our Greenhouse Gas Emissions

1.1. From the Carbon Balance to the Life Cycle Analysis

The company publishes its Greenhouse Gas Emissions (GHG) balance every two years. This includes the carbon impact of its two main products, the DIAM closure for still wines and the MYTIK DIAMANT closure for sparkling wines. In order to broaden its knowledge regarding the environmental impact of its activity, in 2015-2016 DIAM Bouchage led a complete Life Cycle Analysis\(^1\) of these two closures, using the following impact indicators and the consumption of resources:\(^2\)

- The Greenhouse Effect;
- Marine Eutrophication;
- Aquatic ecotoxicity;
- Scarcity of water resources;
- Non-Renewable Energy Consumption;

This approach has also allowed us to model more precisely the production impact of various incoming raw materials, either during the Co2 process, or in the formulation of our closures, based on data provided by our suppliers.

The inclusion of these new elements in the calculation of the balance of previous years, as well as highlighting direct Co2 emissions resulting from the DIAMANT process (consistent with international and national GHG emission balance methodologies), has produced different results and a different presentation of the balances published in previous years.

1.2. Evolution of the GHG Emission Balance for DIAM Bouchage

\textit{Method:} The carbon footprint is calculated by the Carbon Emissions Calculator Methodology, Version 7, on the expanded scope of our activities (direct and indirect emissions), from the supply of raw materials to customer delivery, via our production stages.

\textit{Scope:} The end of life stage of a closure is becoming increasingly difficult to estimate in an international context, it has thus been excluded from the scope. Maritime freight for overseas export has only been included in the balance since 2012.

\(^1\) Carried out by CAIRN Environnement/Eco-Efficient with SIMAPRO software - Eco-Invent 3.2 database, complemented by the modelling of the principal incoming products based on the data provided by the manufacturers.

\(^2\) These indicators were selected in line with the recommendations of the ADEME-AFNOR platform ‘Environmental Labelling of consumer products - A progress report of the challenges facing the agri-food sector’ September 2014.
DIAM Bouchage produced approximately 1.5 billion closures in 2016, representing an increase of +18% compared to 2014, and its GHG emissions amounted to 44,900 TeqCO2, an increase of only 9%.

By examining the results, it is observed that the increase in production has logically led to the increased consumption of raw materials and energy but that the optimisation efforts made by the company in its manufacturing process (new energy efficient moulding machines, the installation of electric meters in workshops) have resulted in the improved control of energy consumption. As a reminder, ‘energy’ represents approximately 30% of the company’s greenhouse gas emissions, compared with 40% in 2006. At the same time, the direct discharges of Co2 from the DIAMANT process have been considerably reduced by the renovation of the DIAMANT I and II plants in Spain and by optimising the design of the DIAMANT III plant.

Furthermore, some suppliers have also optimised their carbon impact, which has resulted in a drop in their own emission factor. After updating the carbon content of the Spanish kWh in 2014 (increase in the renewable share of the Spanish electric mix), our suppliers improved their processes (microspheres) and we chose to regenerate the activated carbon used in the DIAMANT process, which considerably reduces the carbon impact.

Overall, while the production of Diam closures has increased by 80% between 2010 and 2016, Diam’s carbon impact has increased by only 55%, reflecting the company’s optimisation efforts, both internally, and externally with its suppliers.
1.3. Progression of the Carbon Profile of DIAM and MYTIK DIAMANT Closures

Method: ‘GHG emissions’ indicator of the life-cycle analysis study. To produce the closures’ carbon profiles, production data (energy and material consumption) are reported to a typical closure product, on every stage of its life-cycle. The scope is reduced: movement of people and amortisation costs are not considered; the carbon impact is established ex-factory, excluding customer freight (Céret for DIAM, Cumières for MYTIK DIAMOND).

**DIAM:**

![Graph showing the evolution of the carbon impact of DIAM closures](image)

Following a progressive decline since 2010, DIAM Bouchage’s carbon impact has been considerably reduced between 2014 and 2016 (-20%). This is due to the improved control of the processes energy consumption, Co2 emissions at the Spanish site (DIAMANT I and II), and a reduction in production emissions (microspheres and activated carbon).

**MYTIK DIAMANT:**

![Graph showing the evolution of the carbon impact of MYTIK DIAMANT closures](image)
Since July 2015, ground cork produced in Spain has been treated at the new DIAMANT III plant in Céret. MYTIK closures are always moulded at Céret before being shipped to the finishing centre at Cumières in Champagne. As a result, the MYTIK closures benefit from the optimised design of the third plant (CO2 and gas consumption), which has been using new energy-saving moulding machines since 2012. Combined with reductions in the emission factors of certain raw materials, the carbon impact of the cork has decreased by 28% between 2014 and 2016.

1.4. Other Environmental Impacts: Comparison of the DIAM closure with a still wine glass bottle

Method: Indicators of the life-cycle analysis study. The impacts of the glass bottle were calculated on the basis of the impacts of the production of glass packaging supplied by the Eco-Invent 3.2 database.

The DIAM closure contributes between 5 and 10% to the environmental impact of the ‘bottle + cork’ packaging system. The main sources of the closure’s impact are energy consumption (GHG and energy, but also water resources due to the cooling of power plants and emissions from heat production), raw materials and freight (ecotoxicity).

The conclusions are the same for the MYTIK closure in an effervescent wine glass bottle.
2. Recycling our Cork By-products and Waste

The main by-product of our company’s activity is cork dust which is recovered on site (not included in the graph below): its combustion in a boiler makes it possible to produce heat for the processes at the San Vicente site (about 9,000 t of dust used) or for heating buildings at the Céret site (approx. 1,000 t).

The waste discharged to external treatment channels includes material derived from cork grinding processes, agglomerated dust and other waste (packaging, defective closures, maintenance waste...). The division’s overall waste production is 7,420 t, of which 85% is waste containing cork. The generation of waste is mainly influenced by the increase of the company’s activity, especially the grinding phase of raw cork in San Vicente (fraction recovered in composting).

At the divisional level, waste sorting at the source and the use of recycling channels means that significant recycling rates - 89% - have been achieved. Compared to previous years, the very slight decline observed is mainly due to the lack of a composting system for cork dust produced at Céret, which, since 2016, can no longer meet the site’s needs. An alternative channel is being developed.

In general, the sites are introducing new sorting devices. For example, the sorting of office paper and plastic cups was implemented at Céret in early 2017, with the company ELISE; experts in the collection and recycling of all office waste, leading to the recycling of more than 600 kgs of waste in two months.

3. Controlling the Industrial Risks of our Technical Facilities

DIAM Bouchage continuously invests in its production sites, around €500,000 per year, to guarantee the management of industrial and environmental risks:

- prevention methods for fire risks or dust explosion hazards: all materials on the cork flour circuits are compliant with ATEX standards;
- technological adaptation of dust combustion boilers;
- prevention of accidental discharges into water;
- noise control.

Awareness raising and employee training and regular emergency situation tests enable us to progress in the risk management of our various sites.
4. Designing Environmentally Friendly Products

4.1. Engagement in cork oak in France and Catalonia

The valorisation of French cork is part of a stimulus policy initiated after a long period of non-exploitation of the cork oak forests. DIAM Bouchage participates in the revitalisation of this silviculture by the establishment of multi-year procurement contracts. Since 2011, DIAM Bouchage purchases cork harvested in the Pyrénées-Orientales as part of a 10-year contract. The purchased volumes were doubled in 2016. DIAM renewed this operation in 2012 in the Massif des Maures (Var) with a strong increase in quantities, then in 2016 in Corsica. More recently, in 2014, a new contract was signed with a Spanish supplier in Catalonia for new supplies of FSC cork.

The closures derived from these oaks are valorised on priority by local producers in a ‘regional closures’ agreement.

4.2. ORIGINE by DIAM: A bio-sourced closure marketed at the beginning of 2017

DIAM R&D teams have developed a new bio-sourced closure in which the fossil-based food binder is replaced by a binder of vegetable origin and whose microspheres have been replaced by natural beeswax. Launched commercially in January 2017 in the United States and then in February 2017 in Europe, this product fits perfectly into the company’s eco-responsible policy. R&D is continuing to extend this innovation to include the rest of the still and sparkling wines range.

From the available data, in the literature on these new raw materials, we have estimated the carbon impact of this new closure would be approx. 5% lower than that of the DIAM closure. These values will be updated shortly.