Chemsultants International

A Chemsultants International Case Study

An extermination company cuts cost in half by creating an adhesive out of alternative materials

Chemsultants International 9079 Tyler Blvd. Mentor, OH 44060 T (440) 974-3080 info@chemsultants.com www.chemsultants.com

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GOAL

To reproduce an existing product at a substantially lower cost.

ECOLOGIA APLICADA

Ecologia Aplicada is a private extermination company in Mexico. They approached Chemsultants with a rather common, yet difficult objective. They were manufacturing a product, which was functioning well in their business. However, they were importing required adhesive into their country, which was time consuming and definitely not cost effective.

CHALLENGE

Ecologia wanted to keep the functionality of their existing product equivalent, while also dramatically reducing the cost of producing it. Consequently, they asked Chemsultants to develop an adhesive formulation that was as effective as their current one.

CHEMSULTANTS SCIENTISTS TASK

The straightforward path to replicate an adhesive may be to reverse engineer the current formulation. However, the scientists knew that replicating the adhesive would most likely involve replicating the cost structure too. Accordingly, they approached this challenge from a divergent aspect. Theorizing that cost savings would require totally different ingredients, they started from scratch and began to “build” a new, similar adhesive using alternate materials possessing a much lower cost.

THE PROCESS

The Chemsultants team went through several iterations, ultimately finding a specific type of SBS rubber and the proper ratio of low cost tackifiers to blend together. This new blend would closely and accurately match the effectiveness of the existing product. They used a PMA (Probe Material Analyzer, pictured to the right) to measure the new product. Oil was also used as an additive for the dual purpose of acquiring the proper consistency and lowering the overall cost. The output from the PMA guided the team to design an adhesive that contained extremely similar properties as the original, competitive materials.

RESULT

The tack of the new adhesive was actually higher than that of the existing product and could be made for nearly 50% of the cost!

AN ADDED PHASE

During the initial phase of this project, Ecologia did not expect the overwhelming success of this new adhesive. As a result, Ecologia decided to take the change a bit further. They decided to move the manufacture of the new adhesive formulation in-house and skip the import step in the supply chain to drive cost down even more. The new need, or challenge, became to build a mixer to produce this new adhesive. The Chemsultants team assisted in designing and building the precise type of adhesive mixer necessary for this process. The next step for Chemsultants was to travel to Mexico to assist in the installation and initial trialing of the new equipment. After a successful implementation, Ecologia became aware of yet one more hurdle: the newly installed production facility would also mean that quality control must be addressed moving forward. To assist in this area, a loop tack test would be required to maintain consistency of the tack of the product. An LT-1000 Loop Tack test machine (pictured to the left) was purchased from ChemInstruments and retro-fitted with a specific testing head in order to maintain quality and consistency standards that they were hoping to achieve.

From research to new product development, performance and analytical testing, and commercialization to sustainability, Chemsultants was able to fulfill the needs of their very pleased customer.

UPDATE

Ecologia has now been producing their own products for several months, while maintaining quality and consistency. They have reduced costs by up to 50% of their prior arrangement, which achieved their original goal along with gaining independence, security, and sustainability!

For more information

Please contact our Laboratory Services Group at:

Email: info@chemsultants.com

Telephone: (440) 974-3080

Fax: (440) 974-3081

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