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WOOD BASED PANELS
INTERNATIONAL

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GREEKS WITH GIFTS: 40 YEARS OF CHIMAR

More than 10% of panels worldwide are produced using resin technology from Chimar Hellas; but offering services and intangible products often poses a greater challenge than selling a tangible product. Chimar claims to give reassurance to plant and R&D managers, as well as to shareholders. This year the company celebrates its 40th anniversary. WBPI looks at the past, the present and the future of a company at the very forefront of resin technology



A formaldehyde and resin plant constructed by Chimar

The story of Chimar started back in 1977 when Charles Markessini and his wife Effy hit the market with the development of a very special chemical additive. It targeted the particleboard industry and offered huge cost savings, a crucial factor those days as now.

The technology for producing this additive was patented in 40 countries around the world. It was launched into the market via the founding of a strategic partnership with the German company Bison Werke Bähre und Greten GmbH & Co. in 1978. Bison's wide network in the industry gave the opportunity to commercialize the new product through licensing agreements in more than 40 countries within the space of two years.

Recently we have all lived through a financial crisis. There was a financial crisis back then as well. During the oil crisis of 1977 fuel prices increased drastically. As a result, in order to save on fuel people did not properly ventilate homes and offices, and started noticing the pungent smell of formaldehyde which was emitted from furniture, from insulating foams in upholstery, from doors and external walls and even from carpets.

This became a favorite subject of the mass

media, which informed people that their health would suffer from the formaldehyde emissions.

The Markessinis were ahead of the game. They had anticipated market needs, and had developed a second new product, a formaldehyde scavenger, which offered both formaldehyde emission reduction and cost savings. Again they introduced it into the industry via their partnership with Bison.

As it was the first product anywhere on the world market successfully to address this problem, it became a big commercial success, as was its predecessor (the additive for savings) and its successor, a reactive hardener which gave increased resin reactivity and therefore increased productivity.

In an attempt to decrease free formaldehyde emissions, resin producers all over the world started lowering the molar ratio of their resins. This reduced the release of free formaldehyde but it also caused a reactivity issue. The reactive hardener that the Markessinis developed assisted the industry successfully to overcome this problem. Boards could therefore be produced at very low formaldehyde levels while keeping the original reactivity.



An industrial reactor being installed

Production capacity as well as mechanical and water resistance properties were kept at the same level while free formaldehyde emissions were reduced to a very low level.

During this period the Markessinis used the manufacturing facilities of another company, Marlit Ltd, to produce their additives for the Greek market, and installed their own R&D facilities in Thessaloniki, Greece, under the company name ARI Ltd. They continued developing not only additives but also low free formaldehyde resin technology.

By 1992, the company was itself engaged in the actual production of formaldehyde and resins in cooperation with its licensees, starting the construction of formaldehyde and resin plants which were then operated either by licensees or the company itself. Production sites were built in North America, Europe, Africa and Oceania. The

company thus grew into a group, ACM Wood Chemicals Ltd, producing a continuous stream of new technology.

In 2003, following restructuring of the group, all technology rights were passed to the successor company Chimar Hellas S.A., under whose name all Greek companies were merged. Most of the former production sites of the group became Chimar licensees.

Thus Chimar integrated the industrial property and technology rights of its predecessors and continued R&D work for the resin and wood based panels industry, maintaining and expanding the tradition of highly skilled and multi-lingual service that has become recognized by its customers throughout the company's history.

Chimar has always respected the environment. It has engaged itself since early in the '90s in R&D aimed at substituting chemicals sourced from fossil fuels with renewable ones derived from natural biomass. This initiative continues today, in-house as well as via third party R&D. It has resulted, for example, in the development of Lignin-based Resins (LPF) which have successfully provided industrially-proved substitution levels of phenol of up to 80% for plywood and HPL (product development was in cooperation with UPM). Another successful product is the Durabind™ range of No Added Formaldehyde (NAF) binders, a family of engineered biopolymers proved to have great synergy with pMDI adhesives and being already commercialized. Product development was in cooperation with EcoSynthetix.

It rapidly became apparent that the constant provision of state-of-the-art environmentally friendly technology, combined with excellent after-sales service all over the world, were very much appreciated by the company's clientele.

Even during the so-called Greek Economy Crisis, Chimar never stopped developing, and enhancing the global and explorative nature of its Greek soul. By the end of 2013, Chimar's laboratory became the first lab in Greece accredited to EN ISO/IEC 17025 for both Perforator & Gas analysis methods. The Greek market was now enforcing regulations for low free formaldehyde board production. Importers and exporters of wood-based products were therefore happy to find accredited tests inside Greece's borders.

At the same time, the genuine and dynamic exporting nature of Chimar were recognized in European Business Awards, as was the fact that it represented a business model that puts European companies at the forefront of the technological developments that dictate global industrial practices.

WHAT THE COMPANY DOES

The main activities of Chimar today include its traditional role of developing and applying on-site binder know-how for the wood-based panel industry. The Chimar portfolio covers conventional resins, to every formaldehyde emission standard (CARB II, ULEF, F****) applied to the entire range of wood-based panels and engineered wood; the Lignin-based resins mentioned above; and novel additives such as MDI accelerators, reactive hardeners for amino and phenolic resins, cold setting PF and MUF systems, additives for paper impregnation, and vapour catalysts to avoid pre-curing. Third party R&D activities continue to add value to products and by-products and develop performance chemicals, and equipment supply and engineering services include process technology, project management, commissioning and start-up of new resin plants as well as the optimization and revamping of existing installations. More than 15 projects have been completed so far in Europe, North & South America, Africa & Oceania.

Technical support for the industrial application/implementation of resin and

additives technology can be even more challenging than the development of the resin itself. Chimar's service team offers in-house and on-site technical support and training to resin and panel manufacturers worldwide.

LOOKING AHEAD

Being the leading technology supplier in its field, exporting and applying worldwide the technology it has developed gives Chimar the energy it needs to face future challenges.

As the very soul and character of Chimar has been global in nature since the beginning, one of its priorities is to expand its market outreach while forcefully and dynamically entering the bio-based binder market. At the same time the company will follow the philosophy that has served it so well in the past, developing solutions today for the needs of tomorrow by anticipating market needs. It will carry out customer focused R&D, always respecting the environment; develop strong and long lasting relationships with strategic partners, with customers, and with its most precious resource, its employees. Chimar has a successful past, a strong present and an even brighter future. ●

Highlights of 40 years system*

YEAR	ACHIEVEMENT
1977	Innovative resin substitute for cost savings. Patented in 40 countries
1980	Innovative formaldehyde scavenger for low emissions. Patented via 3 patent families in 40 countries
1983	Innovative reactive hardener for increased productivity
1992	1st Formaldehyde & Resin Plant in N. America – Exclusive production for Flakeboard (present ARAUCO GROUP)
1993	1st presentation on Resins for Formaldehyde Emission at the level of natural wood. International Particleboard, Composite Materials Symposium (27th : 1993 : Washington State University)
1995	1st formaldehyde & resin Plant in europe – Woodchem Europe
1998	1st patented bio-based binder technology
1999 & 2006	1st and 2nd patent on UF resins for Very Low Formaldehyde Emission Panels
2010	Chimar Lab accredited as per EN ISO:IEC 17025 (Certificate No. 712-2)
2014	National Champion (exports category) in European Business Awards
2016	Commercialization of Durabind™, a NAF binder - the result of Chimar 3rd party R&D activities
2017	Relocation and integration of the company's assets (laboratory, pilot facilities & offices) in one building (to be completed early 2018)

PRESENT FACTS

- Team of 30
- Since 1977 with presence in 40+ countries
- Know-how applied in 100+ industrial sites
- Over 1.4 million tons per year of resin produced by customers under Chimar technology
- Over 10% of global wood panel production uses Chimar services
- Engineering/Procurement of more than 15 turn-key formaldehyde & resin plants worldwide
- Over 20 patent families in more than 50 countries
- Participation in more than 50 EU projects and scientific networks
- Customers have followed Chimar since the company's Day One
- Chimar is proud of its people and its people are pleased to be part of the Chimar team