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We would like to announce that effective June 15h Tim Glenn has taken over the position of Managing Director at Mifar S.r.l. We would like to take this opportunity to record our thanks for Andrea Meli's Service over the past 10 years and wish him all our best regards. Roberto Ciambrone, a seasoned Operating Consultant, will be supporting for an initial transition period. All members of the Mifar team are fully engaged to grow the business and are committed to this new chapter.



Here is another issue of our Newsletter!

After the success of the first one, we are very happy and proud to present this second issue with valuable contributions from key industry players. They have agreed to devote time to us and offer reflections on the market that we all inhabit with responsibility and commitment, aware that the current geopolitical situation and the Covid crisis have blown up economic schemes that are now obsolete and that indicate the need to move towards a new way of approaching markets and economic development.

The world we live in requires more than just change. It demands transformation. This is what is written on the website of Sun Chemical, the world's largest manufacturer of printing inks and pigments. In this issue, we talk about the successful case history of our Dispervyn VB and WB product line created with Sun Chemical. On the topic of flexible packaging and its future innovation, we could only give the floor to the Goglio Group, a leading company in the industry, in a discussion between Goglio and Mifar R&D Managers.

We then give a big welcome to Mifar's new Plant Manager, Davide Scirea, who joined our team in April 2022. There are also some insights and updates, which we hope will be of interest to you.

Happy reading!

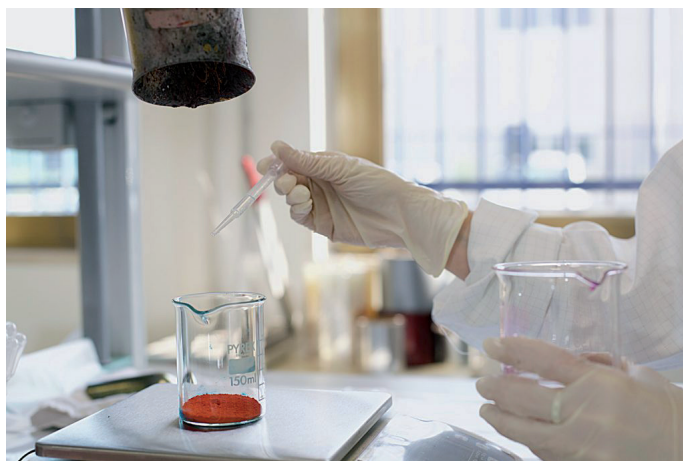
CASE HISTORY

SUN CHEMICAL AND MIFAR: A REWARDING COLLABORATION

There are extremely specific market sectors, which, precisely because they are niche, can tell the high specialization of a production process and a product. This is the case of Dispervyn VB and WB, based on pigments dispersed in low viscosity PVB resin (polyvinyl butyral) of superior quality. Particularly suitable for the production of whiteboard markers and printing inks, Mifar has become the main producer in Europe. The other market players are mainly concentrated in Japan (one of the most important market for these applications), China and the USA.

Over the past 10 years, Mifar has dedicated an important part of its investments, both in terms of laboratory and financial resources, to the research and development of materials capable of providing the reliability necessary for the stability of the inks used for white board. This request was initially received by the main European producers of felt-tip pens, who complained about the difficulty in managing the application performance, especially for the very long guarantee that these products must provide due to the very long times that normally elapse between production and actual use of these products, both for the various and severe conditions to which the materials are subjected during the different storage.

In addition to faster drying and good viscosity, the requirement of high orientation stability has been the success of Mifar's pre-dispersions on this market segment. A qualitative performance that remains the main objective thanks to a continuous Research & Development activity combined with the strict technical requirements and quality controls required.



To guarantee these performances, Mifar turned to suppliers who had specific pigments to be used for this type of product, but above all who could guarantee long-term consistency and reliability, both in terms of quality and response to regulatory aspects on a global scale.

"This was when the precious collaboration between Mifar and Sun Chemical (previously BASF Colors & Effects) was born. It has always guaranteed us a solid competence both in day-to-day supplies and in the various development projects undertaken in recent years" declares **Andrea Meli, Former CEO of Mifar** and adds *"We have successfully continued our partnership with Sun Chemical after they have finalized the acquisition of BASF's global pigment business. With Sun Chemical now recognized as the world's largest producer of pigments, this collaboration has strengthened the relationship with Mifar, forming the basis for future development."*

"As a strategic collaboration partner, Mifar values Sun Chemical both as a reliable supplier and an innovative one because of our comprehensive technical offerings. For example, Sun Chemical's pigments provide outstanding flow and formulation stability in Mifar's product line Dispervyn. Additionally, our strong focus on pigment product safety and regulatory provides peace of mind when using our colorants" explains **Dr. Arno Tuchbreiter, Global Segment Mgmt Specialties of Sun Chemical**. He adds *"We have enjoyed a long and trustful relationship with Mifar, which started many years ago, and now we continue to build on that partnership as a part of Sun Chemical."*

Sun Chemical pigments guarantee Mifar the production of high gloss solid pre-dispersions, excellent coloring strength with an adequate viscosity for final use. The main use of Dispervyn VB and WB is the production of whiteboard markers. The inks for markers made with Mifar chips offer fast drying, high dispersion quality and no residual traces of writing on the blackboard, even after immediate erasing.

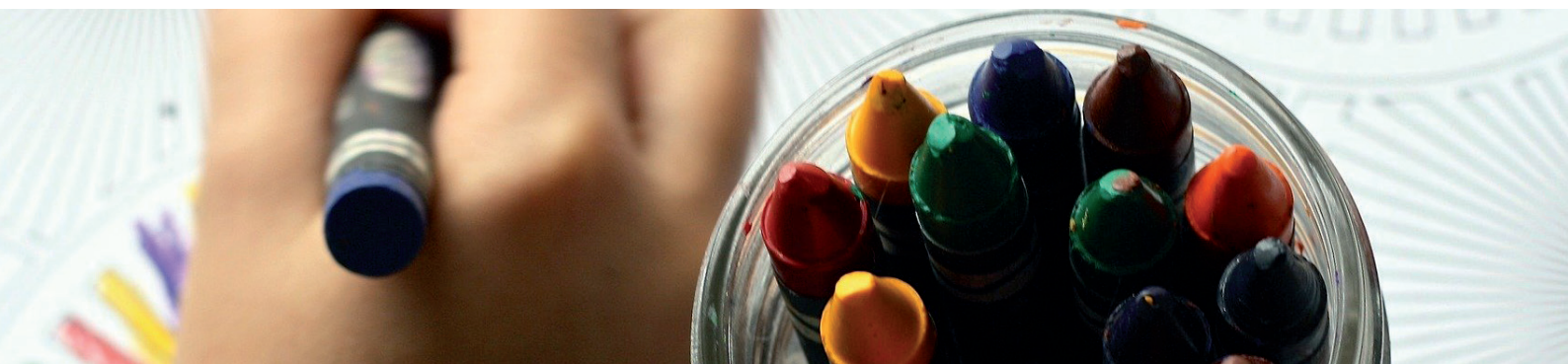


CASE HISTORY

THE MOST EFFECTIVE DISPERSION METHODS OF DISPERVYN VB AND WB CHIPS

- In the disperser weigh the minimum quantity of vehicle necessary to proceed with the dispersion of the chip. Once stirred, by means of a mechanical stirrer, at regular intervals, making sure that no deposits are formed on the bottom and on the walls, add the chip flush with the container so that it enters the vortex generated by the impeller.
While adding the chip, be sure to maintain a constant dispersion rate as the viscosity of the vehicle increases. The mixture thus obtained is left under stirring for a period of time comprised between one and two hours. After this time, after making sure that you have obtained the maximum possible dispersion for the chip, complete the product with the liquids that remain to be added. Continue the dispersion for another ten or twenty minutes, in order to obtain a homogeneous product.
- Following the previous indications, it is possible to proceed with the production of high concentration chip pastes. This allows you to store the pasta, and when needed, take only the amount necessary to bring it to the desired concentration for use.

Dispersyn VB and WB chips are readily soluble in alcohols, glycol ethers and esters.



A LITTLE HISTORY

The first marker was patented in 1910 in the United States by Lee Newman. It was a cylinder filled with ink that led to a felt tip. This object as well as those patented between the 1920s and 1940s were not commercially usable. The first modern marker was on sale in 1953. It was Sidney Rosenthal's "Magic Marker", equipped with a glass tube and a felt wick, whose name derives from the ability to write on any surface. In the mid-1950s Luigi Barosso, chemist from Settimo Torinese, invented the wool felt pen while Yukio Horie of the Tokyo Stationery Company, a few years later, in 1962, invented the water-based ink marker. Francis Honn is credited with inventing the first highlighter in 1963.

THE MARKER TODAY

During the lockdown period in Italy, "The Battle of the Pennarello" was born, following the ban on the sale of drawing and stationery items in department stores, as they were not considered basic necessities. This gives the sign of how today the felt-tip pen has reached a representative position among the creative tools of the stationery and stationery world, among which 'White Board' products can also be included. A market that in recent years has achieved consistent development linked, among others, to the return of certain habits such as album coloring and graphic applications for pure leisure and de-stressing purposes. It is certainly a market that looks carefully at the recovery of values and attitudes related to environmental sustainability but also to personal well-being.

DAVIDE SCIREA

MIFAR'S NEW PLANT MANAGER



DAVIDE SCIREA
Plant Manager,
Mifar

He comes from a totally different industry, that of the Sapio Group, an Italian leader in the production and supply of industrial gases. On 1 April 2022, he assumed the role of head of Mifar's Rescaldina Plant, ready to take on this new professional challenge in a proactive manner, *'just like an uphill climb that always leads to improvement.'*

"I am confident that my plant knowledge and safety-conscious approach can support the continuous improvement process based on risk-based thinking," says Davide Scirea, almost 40 years old and with extensive experience in international companies and Italian institutions.

We asked Davide Scirea a few questions.

In the digital age, where everything runs fast, 'down to earth' professions still exist. Like the Plant Manager. Do you agree?

Despite living in the digital and super-connected era, I believe that the profession of Plant Manager is still classified as a "down to earth" profession. In fact, it thrives on intrapersonal relationships and empathic intelligence, characteristics that have not yet been "digitised."

What do you consider to be your mission at Mifar?

In line with the goals that Mifar's management has set for itself in the medium to long term, my role will be to increase and maintain a high level of security in the management of the plant. This will be done in a synergetic way, contributing to business development and increasing the size of the company.

Do you consider that being responsible for the safety of workers and the plant is the most important role of the Plant Manager?

In my opinion and the way I interpret my job every day, the Plant Manager must have this order of priority within the site: Safety, Compliance, Efficiency and Productivity, aiming to always keep the customer at the centre, which is perfectly consistent with Mifar's approach to the market over the years.

What are your thoughts on the ecological transition for the chemical industry?

Every company today must be committed to sustainability, it is an essential driver. However, it is clear and logical that the ecological transition and decarbonisation process is slower and more gradual in some sectors, especially since some of the substances used in the chemical industry are not yet currently replaceable. Therefore, I believe that there is still much to be done for an ideal development model capable of ensuring that the needs of the present generation are met, without compromising the possibility of future generations."

THE MIFAR PRODUCTION PLANT

The production facility covers an industrial area of 10,000 square metres in Rescaldina, in the north-west of the province of Milan. It is the most advanced chips plant in Europe due to the state-of-the-art machinery and equipment at our disposal and the production capacity of solid mono-pigmented dispersions, which has more than doubled in recent years. The plant operates under safe HSE conditions, with BAT installations and authorisations, a 50-tonne nitrocellulose storage bunker, sprinkler systems and water reserve, as well as an afterburner to reduce local emissions.



GOGLIO AND MIFAR, PARTNERS IN INNOVATIVE FLEXIBLE PACKAGING



GOGLIO, Mauro Fedeli, R&D Manager Inks and Adhesives

The partnership between Mifar and Goglio has distant origins, with the first collaborations dating back to the late 1990s. The two companies have collaborated and developed a system of coloured chips made of vinyl-chloride resin, whose excellent processing has enabled Goglio to produce inks with outstanding colour yields for more than 30

years. This collaboration has made it possible to perfect and refine the product, arriving at an undisputed level of quality, capable of guaranteeing compliance with the laws on printing inks for food-contact materials.

The choice of chips based on vinyl-chloride resin has been fundamental for the creation of inks not only with high gloss, but above all with unsurpassed mechanical and thermal resistance. These inks have now become the most effective and best-performing inks for the production of laminates to be subjected to sterilisation processes, even above 130°C, without resorting to the addition of isocyanate-based catalysts, which can reduce the ink's pot life.

This was the past and it is the present, but it will not be the future. Innovation in flexible packaging and the introduction of materials suitable to meet the laws of the circular economy present new challenges and the need to address the printing of flexible materials with different chlorine-free chemical processes, whether of a polyurethane or nitro-derived nature.



CEFLEX has established guidelines for defining ink properties for the production of PE or PP materials compatible with the mechanical recycling process: the absence of PVC-based resins is a MUST. Goglio has already taken action and is ready to tackle this innovation with a view to finding high-tech solutions that meet the requirements of materials intended for food packaging.



R&D AREA



MIFAR,
Flavio Salvatori,
R&D Manager

The chips used by Goglio are currently Mifar's DISPERVYN VD, based on hydroxyl-modified vinyl chloride/vinyl acetate copolymer. Due to their formulation, they are used to make inks for both gravure and flexographic printing on polymer films, such as PVC and PET, and for lamination, multi-lamination and food packaging. Their performance also

allows them to be used for printing on ALUFOIL and other plastic materials for different applications.

Together with the DISPERVYN VD chips, Mifar offers DYSPERVYN VB chips in which polyvinyl butyral is used as a resin combined with pigment. The DISPERVYN VB chips originate as alcohol-soluble chips for making whiteboard markers, however the nature of the polyvinyl butyral resin offers a wide range of uses. Good dispersibility for pigments,

as well as excellent film-forming, tack and flexibility properties make the polyvinyl butyral resin ideal for gravure, letterpress and flexographic printing inks.

Pure PVB has the advantage of being non-toxic and harmless to the human body, and ethyl acetate or alcohol can also be used as solvents. Therefore, PVB is widely used in printing inks for food containers and plastic packaging in European and American countries.

Mifar is studying new formulations aimed at the development of pre-dispersed resin pigments in the clear future direction of flexible packaging, i.e. toward a PVC-free world. In this respect, interest is increasingly shifting to polyurethane-based systems and to the re-evaluation of nitrocellulose-based systems, in which MIFAR has extensive experience with the DISPERCEL NC and COMPOSTABLE series, the latter produced with compostable and TÜV-certified raw materials.

Guidance				Reasons	Advice	Materials and components for investigation in phase 2
Inks & lacquers	COLOUR	Compatible with PE or PP mechanical recycling	Limited compatibility with PE or PP mechanical recycling	Not compatible with PE or PP mechanical recycling		
		Lighter, paler ink colours	Darker ink colours	n/a	Facilitates higher value recycling as more natural/paler colour and avoids disruption of mechanical recycling process. PVC binders are known to disrupt the recycling process.	Impact of inks, lacquers and varnishes on sortability and recyclability
	TYPE AND COVERAGE	Lacquers and inks (without PVC binders) up to a maximum 5% of total packaging structure weight	Lacquers and inks (without PVC binders) above 5% of total packaging structure weight	Lacquers and inks containing PVC binders		
	PRINTING SURFACE	Surface printing & Lamination printing	To be determined	n/a		

Source: CEFLEX (Circular Economy for Flexible Packaging) guidelines

FLASH NEWS

In recent months, the continuous and extreme increases in electricity and gas costs have made it impossible to keep down production costs. As of April, Mifar has therefore applied a surcharge on all products, which will be adjusted as soon as the market and geopolitical situation permits.

The beauty industry has partially recovered from the post-pandemic sales downturn and might be reaching 2019 levels this year, despite the 8% decrease in sales registered in 2020. The beauty market, however, showed resilience thanks to the good results reached by some categories of products, as shown in the 2021 Annual Report from L'Oréal. This growth was led by the skincare market. The performance of the makeup, nail lacquers and fragrance market will depend on pandemic-driven social restrictions in each region, it will also be driven by online distribution channels, e-commerce and, more recently, social commerce, considered important drivers for the next years.



The latest Nordmann News is dedicated entirely to the topic of sustainability. It is entitled "Going Green" and presents views and perspectives, collects information and, ideally, provides impetus for sustainable action. Download area of the website www.nordmann.global

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