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UNIQUE CHEMICAL SOLUTIONS

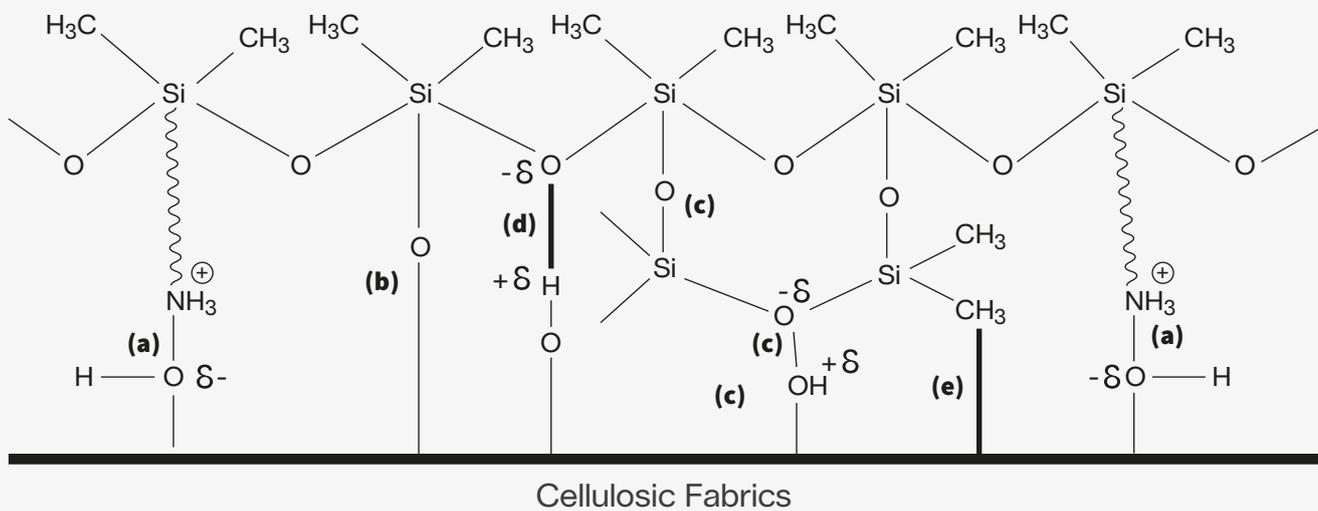
SILICONE SOLUTIONS FOR WATER BASED INK FORMULATIONS

Screen Printing and Water Based Inks

Screen printing is a printing method which is used for textile, ceramic, metal and glass printing. It consists of two main parts, stretched mesh within metal or wooden frame and squeegee.

Screen printing inks are binders which bond dye and fabric. The advantage of water based printing ink is using water as solvent.

In this figure chemical bondings with silicone polymers and fabrics are indicated.



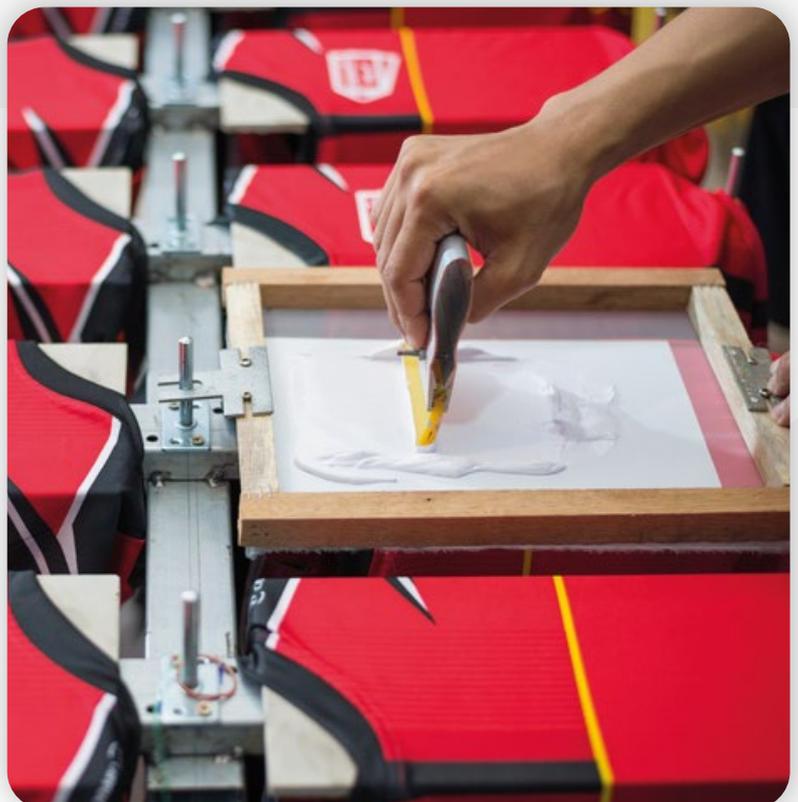
(a) Ionic Interaction

(b) Covalent Ether Bond Between Cellulose And Amino Silicone Molecules

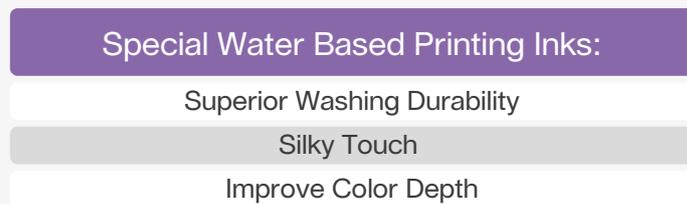
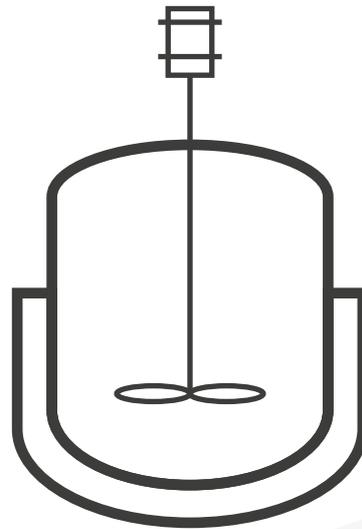
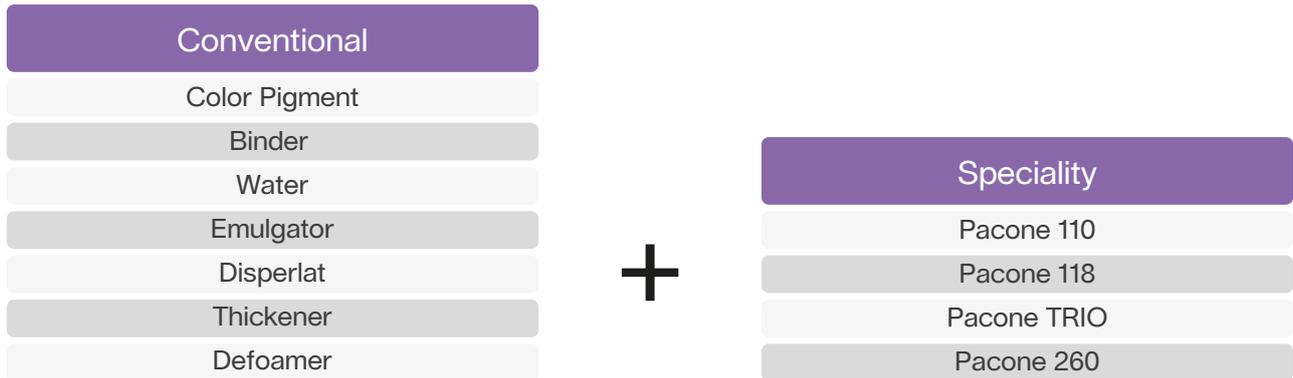
(c) Covalent Ether Bond Between Amino Silicone Molecules Themselves

(d) Hydrogen Bond

(e) Van Der Waal Interaction



In the figure below, fundamentals of water based ink can be seen. With new generation speciality additives, breakthrough features are brought in printings.

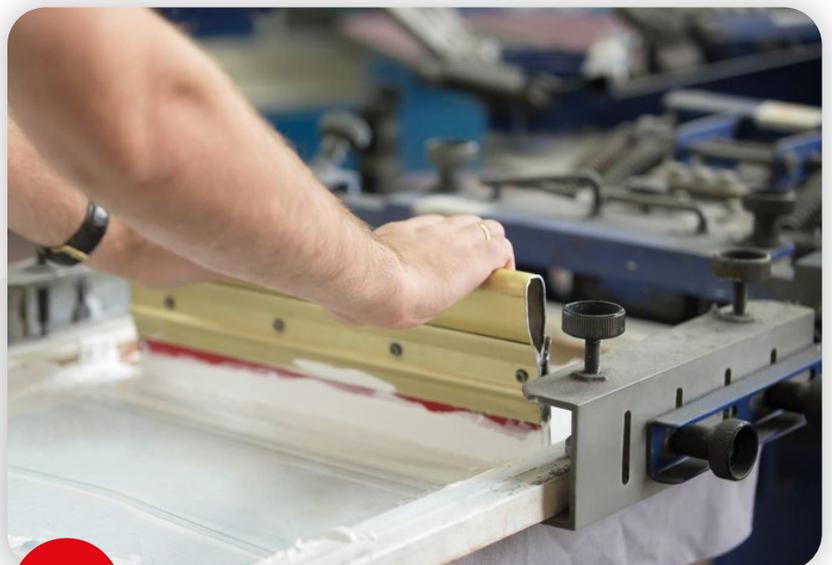




Why Pacone Series?

Pacone series are used for formulation of water-based inks to have silky-touch, color depth, covering and anti-cracking effects.

Pacone series are developed for enhancing these values. Usage ratio of Pacone series in water based printing ink formulations is 1-5%.

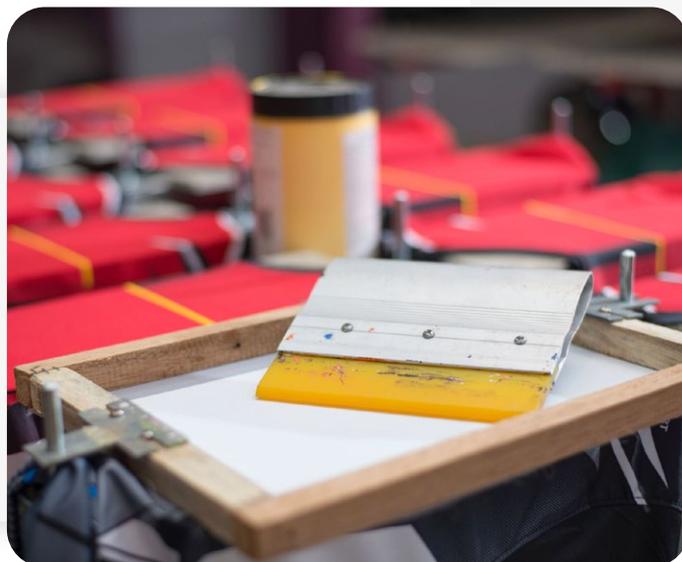


Pacone 110

Pacone 110 is slightly cationic modified silicone fluid and has high viscosity. Because of the long chain, Pacone 110 provides silky-touch effect which is superior when it is compared to conventional silicone emulsions.

Key Features

- Excellent Silkiness Effect
- Low Yellowing
- Improved Non-tacking
- Washing Durability



Hydrophilicity	●	●	●	●	
Whiteness	●	●	●	●	●
Elongation	●	●	●	●	●
Tear Strength	●	●	●	●	●
Silky-Touch	●	●	●	●	●

Appearance at 25 C	Yellowish, Clear
Viscosity at 25 C (Brookfield)	4000 cst
Amine Value ASTM D2074 - 07(2019)	0,2 meq/g
Active Content % (160 C) HALOGEN LAMP	>95

Table 2: Physical Properties of PACONE 110
Recommended Usage : 2,1 -3,2 %

Pacone 118

Pacone 118 is a quat silicone fluid which has rich amin content. It improves silky-touch effect and coverage on fabric without causing yellowing effect in berger tests.

Key Features

- Superior Soft-touch
- No Tacking
- No Cracking
- Easy To Use
- Effective In Low Dosages
- Non Ionic Character



Hydrophilicity	●	●	●	●	●
Whiteness	●	●	●	●	
Elongation	●	●	●	●	●
Tear Strength	●	●	●	●	●
Silky-Touch	●	●	●	●	

Appearance at 25 C	Yellowish, Clear
Viscosity at 25 C (Brookfield)	1000 cst
Amine Value ASTM D2074 - 07(2019)	0,4 meq/g
Active Content % (160 C) HALOGEN LAMP	>95

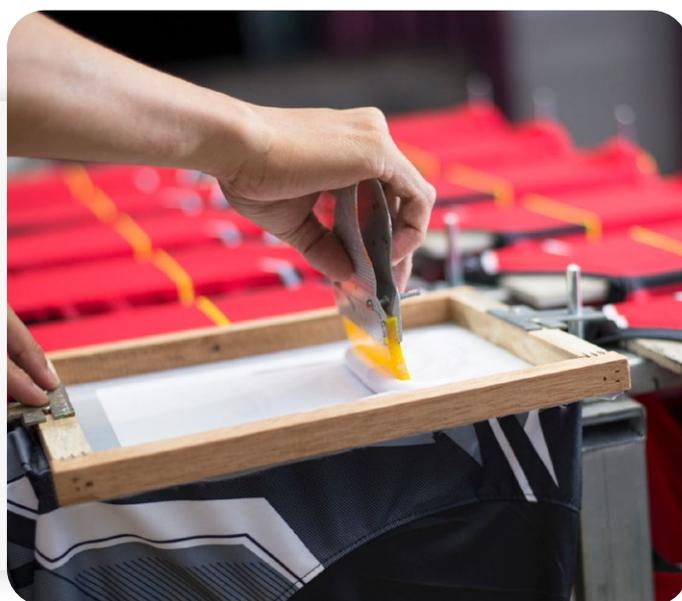
Table 3: Physical properties of PACONE 118
Recommended Usage : 2,1 -3,2 % *

Pacone 260

Pacone 260 is silicone emulsion formulated with silicone fluid. It is oil in water non-ionic silicone emulsion. Pacone 260 brings a superior silky touch effect with slipperiness. Also, coverage and shiny looking bring more quality to printing. It improves stability in the final product and can be used as a lubricant in ink formulations.

Key Features

- High Color-deepening
- No Yellowing
- Imparts Shiny Effect
- Improved Antistatic
- Fully Non-ionic Character
- High Stability
- Optimum Particulate Size Distribution



Hydrophilicity	●	●	●		
Whiteness	●	●	●	●	●
Elongation	●	●	●	●	●
Tear Strength	●	●	●	●	
Silky-Touch	●	●	●	●	●

Appearance at 25 C	White Liquid
Viscosity at 25 C (Brookfield)	500 cst
Ionic Character	Non-ionic
Active Content % (160 C) HALOGEN LAMP	>60

Table 4: Physical Properties of PACONE 260
Recommended Usage : 1,8 -3,8 %

Pacone Trio

Pacone Trio is designed specifically for ink formulation. Pacone trio is a softener emulsion of high weight silicone fluid.

Key Features

- Soft Silky Hand Feeling
- Color-deepening
- Washing Durability
- Easy To Formulate
- Improves Antistatic Effect
- High Surface Smoothness



Hydrophilicity	●	●	●	●	●
Whiteness	●	●	●	●	
Elongation	●	●	●	●	●
Tear Strength	●	●	●	●	
Silky-Touch	●	●	●	●	●

Appearance at 25 C	White Liquid
Viscosity at 25 C (Brookfield)	4000 cst
Amine Value ASTM D2074 - 07(2019)	0,4 meq/g
Active Content % (160 C) HALOGEN LAMP	>95

Table 5: Physical Properties of Pacone Trio
Recommended Usage : 2,1 -4,2 %

		Untreated	Pacone 260	Pacone 110	Pacone 118	Pacone Trio
Appearance	-	White Paste	White Liquid	Yellowish, Clear	Yellowish, Clear	White Liquid
Viscosity	(Brookfield RV DV 2 - LV-1) cPs	-	500	4000	1000	4000
Whiteness	(Berger)	50,48	61,88	59,23	51,42	53,86
Hydrophilicity	(Contact Angle)	37,1	37,85	49,4	54,88	56,23
Active Content (Halogen Lamp)	Si	-	>60	>95	>95	>95
Recommended Usage Ratio	%	-	1,8-3,8	2,1-3,2	2,1-3,2	2,1-4,2
Elongation	%	173	180	185	181	181
Tear Strength	N	886,7	968	991,4	985,4	979,7

Table 6: Technical information about Pacone Series.

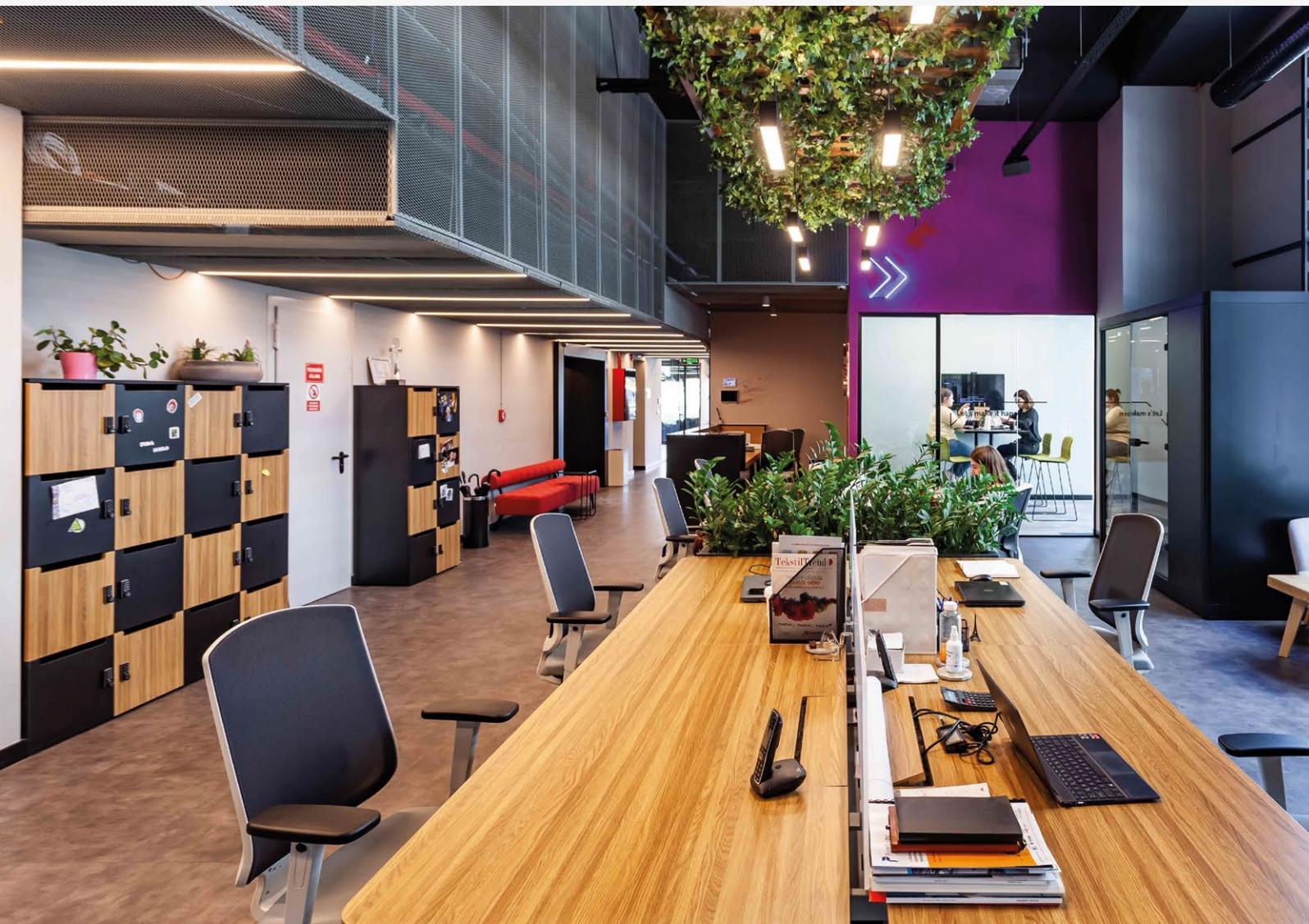
*Viscosity is measured with Brookfield RV DV 2 viscometer in cSt unit.

*Whiteness is measured with Color X-Rite - SpectraLight QC in Berger unit.

*Contact angle is measured with sessile drop method by water as dispersant.

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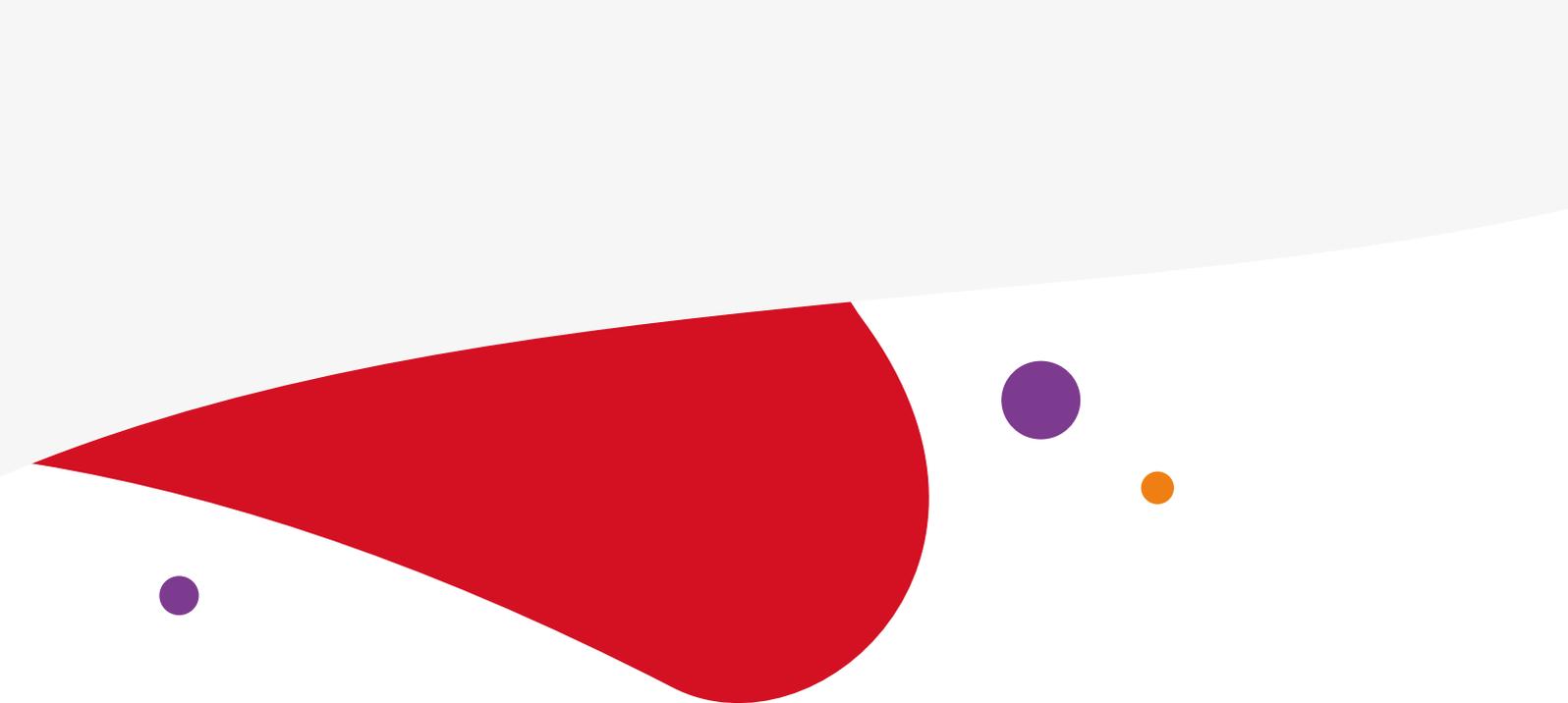
Latro has developed a high-quality service at formulating and supplying sustainable chemical raw materials and solutions. Our comprehensive solutions are served in an extensive spectrum of sectors, such as Textile, Cosmetics, Agriculture, Silicone elastomers, and Industrial applications.

Latro offers technical support, new product development, and sufficient solution suggestions for pre and after-sales. The key factors that separate us from most of the other chemical companies are our chemistry know-how, technical logistics, client-oriented solutions, specialty products, product development studies, and attention we pay on nature via sustainability. With these assets, we set our target higher not only providing the products but also eliminating the problems our customers can encounter.

To fulfill our commitment better we established “Wonderlab”, a laboratory specialized in research and product development. This facility allows us to develop new formulation solutions as well as product characterizations. Wonderlab is also a laboratory where our customers can experiment with the products and formulations with us. Latro aims to invest further into research by supporting young researchers, acquiring new equipment, and providing laboratory experience to customers.

Latro offers a wide range of innovative and sustainable solutions for textile embossing with silicone elastomer. We are supporting our customers by creating tailor-made formulations and making various performance tests in our application laboratory in order to support the marketing claims. Our main goal is to create value-added and cost-effective products by following the market trends.





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