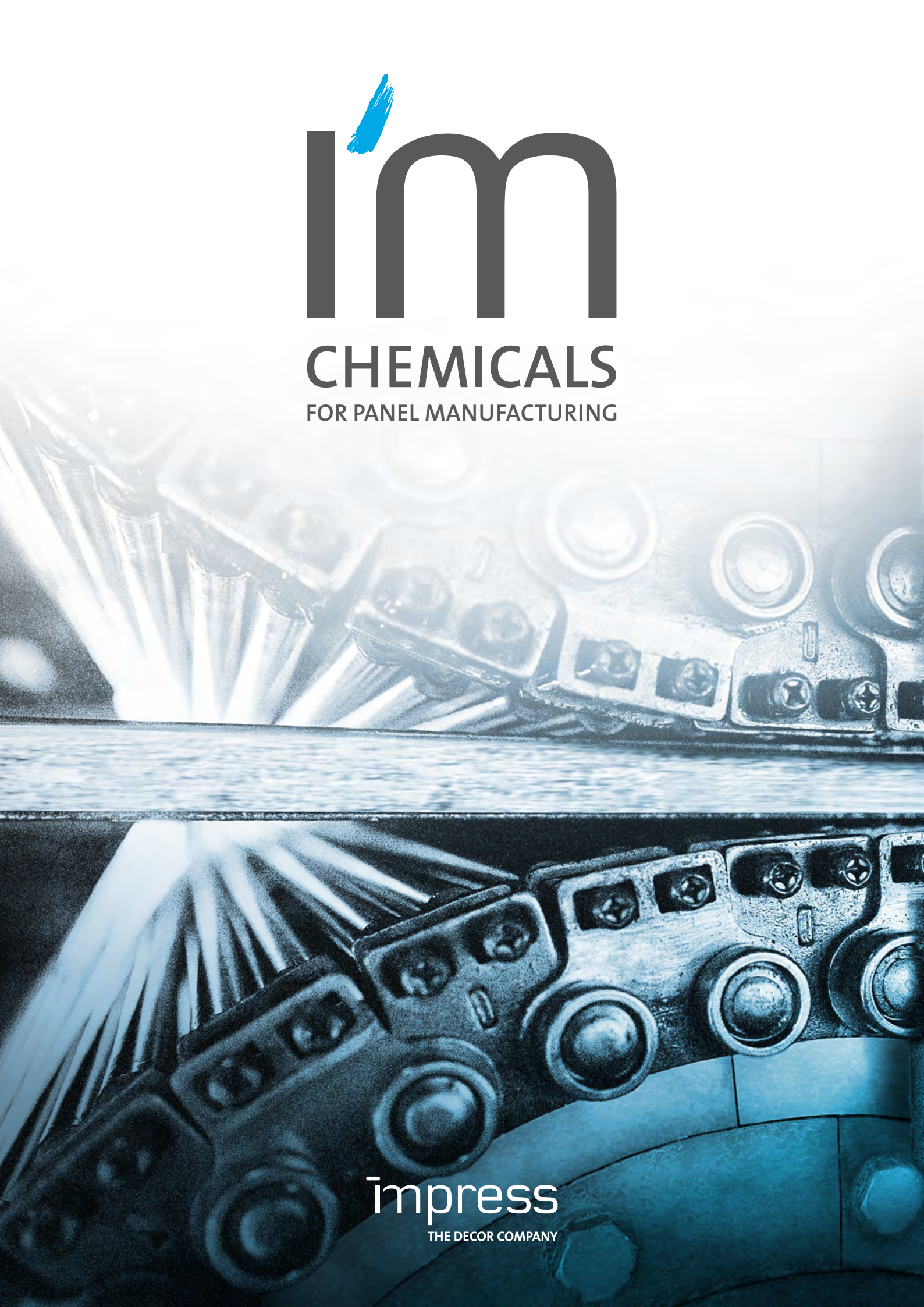
CHEMICALS

FOR PANEL MANUFACTURING



impress

THE DECOR COMPANY

Content

INTRODUCING IMPRESS ADDITIVES 4

01 Glue Hardener 8

02 Accelerator 12

03 Release Agent 16

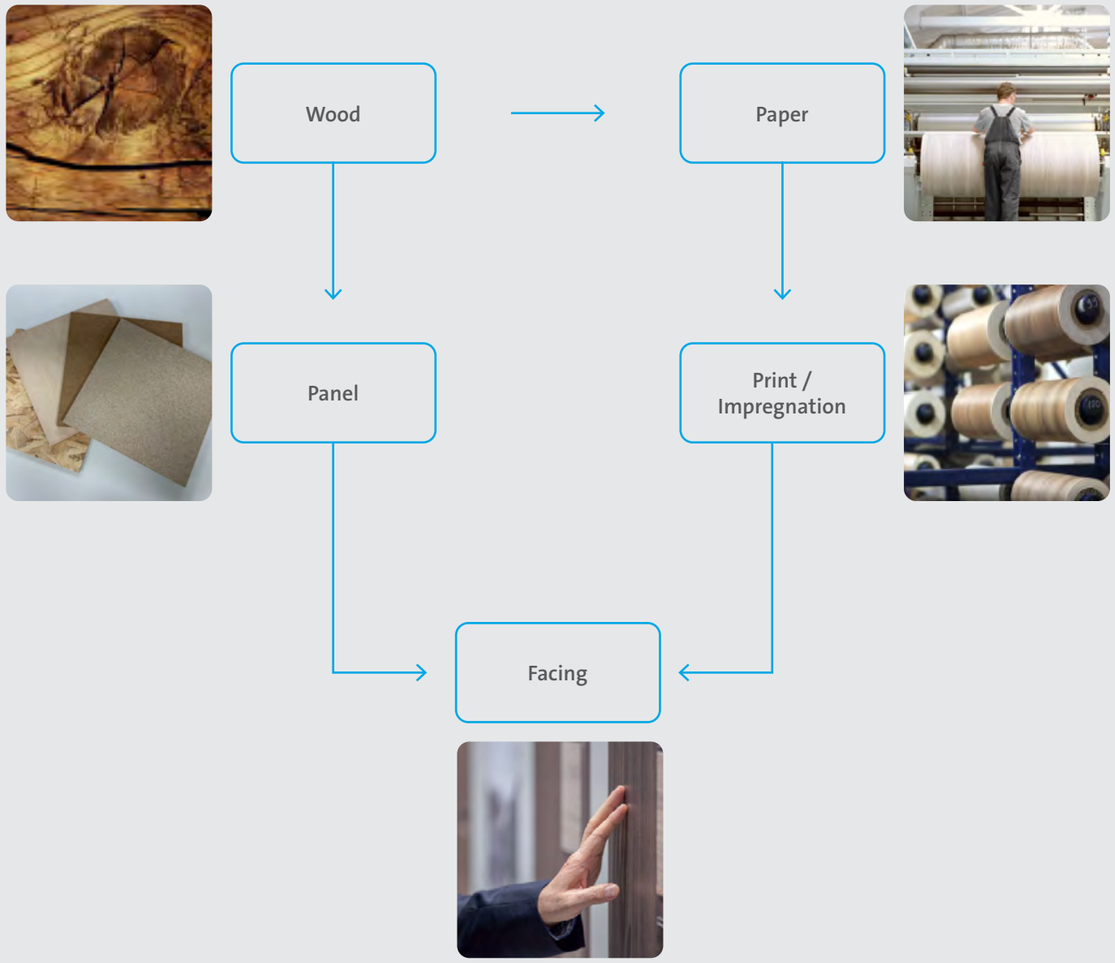
04 Fire Retardant 22

05 Pigment Dispersion 26

06 Edge Sealer 30

Introducing impress Additives

impress has years of experience in the production of impregnated decorative papers, related impregnation resins and additives. During interdisciplinary work with panel manufacturers, many similarities and synergies were identified comparing the processes of impregnating papers and manufacturing of panels. Consequently, a portfolio of chemicals especially dedicated to the production of wood-based panels was developed.



Type	Product	Description
01 Glue Hardener		
	iGH010	Standard hardener for (M)UF
	iGH020	Semi-latent hardener for (M)UF
	iGH030	Latent hardener for (M)UF
02 Accelerator		
	iIH537	Standard accelerator for pMDI
	iIH538	High solid accelerator for pMDI
03 Release Agent		
	iCR940	Release agent for (M)UF
	iCR940K	Release agent for (M)UF
	iCR951	Release agent for (M)UF
	iCR952	Release agent for (M)UF
	iCR971	Release agent for (M)UF & pMDI
	iCR972	Release agent for (M)UF & pMDI
	iCR973	Release agent for (M)UF & pMDI
04 Fire Retardant		
	iFR740	Fire retardant (solution)
	iFR750	Fire retardant (dry/solid)
	iFR760	Fire retardant (dispersion)
05 Pigment Dispersion		
	Tabersperse Yellow	1130, 1131, 1142, 1143 B.C., 1146
	Tabersperse Red	1101, 1120 B.C., 1721
	Tabersperse Blue	1199
	Tabersperse Green	1108 B.C., 1109 B.C., 1110 B.C., 1111 B.C.
	Tabersperse Black	1181 B.C., 1181/1 B.C., 1182 B.C., 1183 B.C., 1184 B.C., 1186 B.C., 1192 B.C.
06 Edge Sealer		
	Edge Sealer Blue	1300
	Edge Sealer Black	1310

01 Glue Hardener

impress Glue Hardener

After extensive experience in producing impregnated decor paper, impress gained lots of know-how concerning catalysts for Aminoplast-systems.

The experience concerning reactivity adjustments of impregnation resins was matched to UF- and MUF-glues, and a functional portfolio of glue-hardeners was developed and placed in the field of panel manufacturing.

impress offers classical high reactive systems of Ammonia-salt formulation, as well as latent hardener systems to be able to best service all market`s needs.

The concept of latency is a very important concerning proper control of the curing reaction. Latency of a hardener system describes the possibility of controlling the starting temperature of the catalytic curing reaction. Compared to a standard hardener, a latent hardener starts the curing reaction at higher temperatures, but at ambient pressing temperatures, full catalytic activity is deployed.

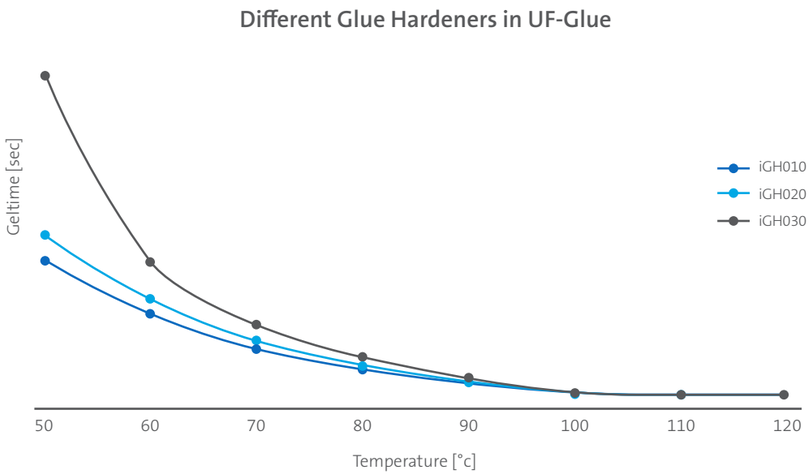


Figure: Reactivity of iGH010, iGH020, iGH030

The advantage of latent hardener systems is a better control of curing of the glue:

- The start of catalytic activity is delayed, depending of temperature.
- Therefore, the curing only takes place in the press – no unwanted pre-curing takes place.
- Precuring especially in summer time can be prevented.
- No negative overcuring of board surface.
- Improved heat transfer to the core.
- Better control of curing leads to more homogenous final polymeric network.

The standard portfolio of impress glue hardeners includes different reactivities/latency.

Product	pH	Density [kg/l]	Description
01 Glue Hardener			
iGH010	6,0-7,0	1,22-1,26	High reactive standard hardener for UF- and MUF-systems
iGH020	6,0-7,0	1,18-1,22	Medium-latent hardener for UF and MUF-systems
iGH030	6,5 - 7,5	1,25 - 1,28	Latent hardener for UF and MUF-systems

Accelerator 02

impress Accelerator

Since formaldehyde-free glues and binders are of growing interest, impress also offers catalysts for pMDI-systems. As the chemistry is different compared to (M)UF-systems, special compounds are necessary.

The curing of pMDI is distinctly influenced and controlled by water. If a significant amount of water is present in the wood-glue-system, the curing is mainly determined by reaction between pMDI and water. Concerning reaction control and speed of crosslinking, this pMDI-water reaction is clearly limited – as a consequence, in many cases the production speed also faces certain limitations.

If productivity should be increased, a faster and more controlled reaction is necessary to assure full curing during the shorter contact-time in press. To overcome this limitation of water-pMDI-reaction, the use of a catalyst (=accelerator) is necessary to increase and control the reactivity.

When using catalyst, a special focus is necessary on “over-curing” and “pre-curing”: if reactivity is too high or reaction starts too early, some curing reactions might occur before entering the press – pre-cured and over-cured glue mostly ends up in poor mechanical properties of the board. Consequently, the dosing and adjustment of the accelerator has to be found in accordance to the individual requirements.

DSC: Energy of curing reaction

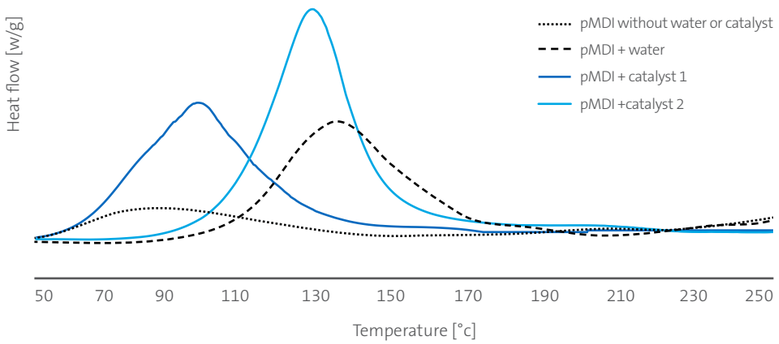


Figure: DSC-curves of different catalysts in pMDI (differential scanning calorimetry)

Product	pH	Density [kg/l]	Description
02 Accelerator			
iIH537	8,5-9,5	1,01-1,05	Standard accelerator-system
iIH538	6,5 -7,5	1,05-1,09	Higher active ingredients and reduced water content for increased reactivity

03 Release Agent

impress Release Agent

The impress iCR-product range contains release agents for manufacturing of:

- Particle boards
- MDF/HDF
- OSB
- Hardfibre boards
- Plywood
- Laminated & engineered wood

As every manufacturing system is complex and unique, we are able to adapt the base formulation according to the current requirements:

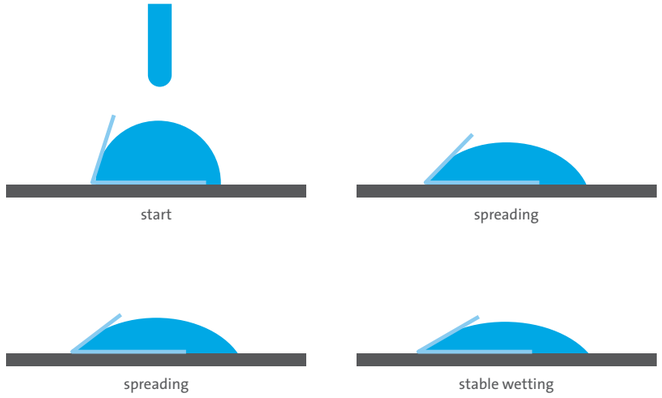
- Inhibition against microbial activity
- Adaption of foam formation
- Adjustment of viscosity and wetting behaviour for optimum application with all systems (roller system, WEKO system, spraying system)

According to the individual requirements, impress release agents can be used on the mat, on the steel belt and on the forming belt.

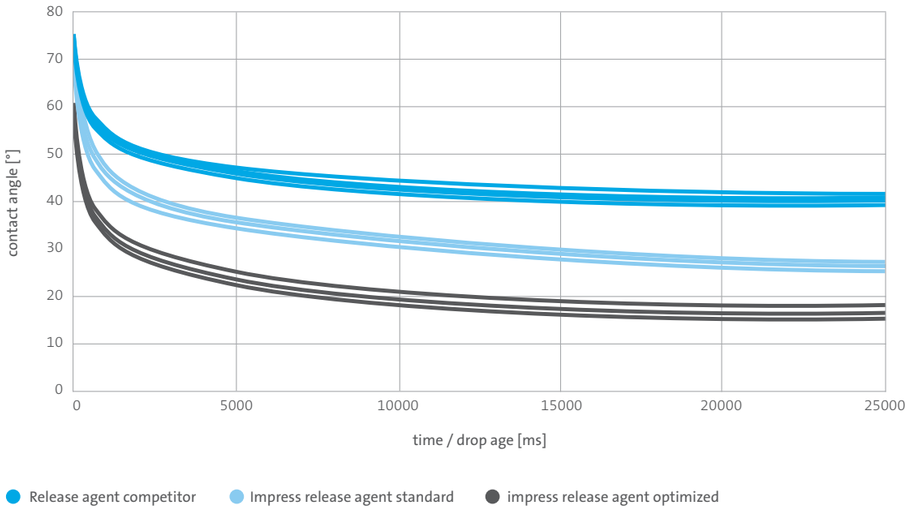
Your benefits:

- Sticking to the belt is reduced and avoided
- Dirt build up is reduced
- The belt is easier to clean
- The static effect is reduced
- The performance of the spraying system is improved
- Wettability with water is improved
- Reduction of contamination during further processing on asymmetric coating
- All our release agents are VOC-free
- All our release agents are water compatible and can be diluted according to the requirements.
- Tested stainless steels are fully resistant.
- All our release agents are in accordance with national and international health and safety regulations.

One important parameter is the interaction between the release agent and the surface of the press belt. With know-how and specific equipment, it is possible to adjust the surface-active properties according to individual needs. Consequently, the adjustment for different machinery and especially applying-system (spraying, roller) can be done precisely.



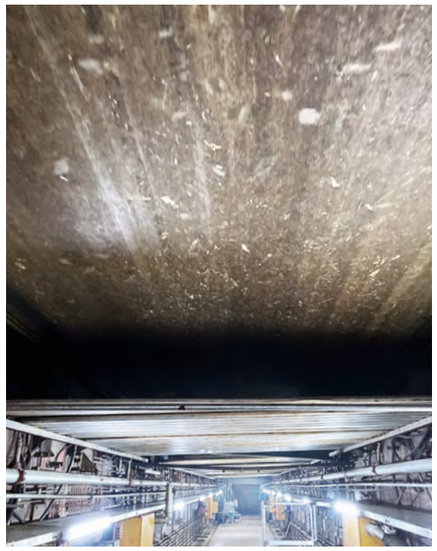
Contact angle measurements on pressbelt



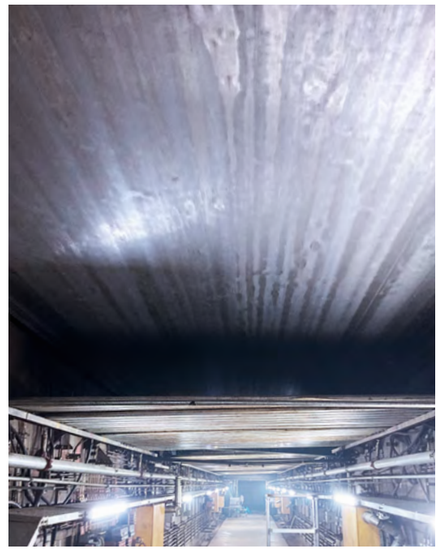
Product	pH	Density [kg/l]	Glue Type	Description
03 Release Agent				
iCR940	6,9-7,9	1,00-1,02	UF / MUF glue	standard, cost effective release agent for MDF/HDF/chipboard production
iCR940K	6,9-7,9	1,00-1,02	UF / MUF glue	Standard release agent with special conservation against microbial contamination
iCR951	10,0-11,5	1,01-1,03	UF / MUF glue	Release agent with adapted properties, especially for improved wetting properties of forming belt
iCR952	6,5-8,0	1,00-1,02	UF / MUF glue	Release agent with adapted properties, especially for improved wetting properties of forming belt
iCR971	10,0-11,5	1,02-1,04	All glue types especially pMDI	Standard release agent especially for pMDI-based boards
iCR972	10,0-11,5	1,02-1,06	All glue types especially pMDI	Adapted release agent especially for surface improvement of pMDI-based boards
iCR973	10,0 - 11,5	1,03 - 1,05	All glue types especialley pMDI	Adapted release agent especially for improved wetting behaviour

without impress products
brown steel belt with adhesive flakes (bad function)

with impress iCR971
(clean steel band without gluing)



without impress products
brown steel belt with adhesive flakes (bad function)



with impress iCR971
(clean steel band without gluing)

04 Fire Retardant

impress Fire Retardant

impress fire retardants are based on halogene free inorganic materials and are available in different forms.

If open fire and flames get in contact with the fire-retardent-material, a combination of physical and chemical effects occur to minimize the flammability of the board.

The dosing amount has to be adapted according to the used material (wood, glue, auxiliar) and the aimed classification.

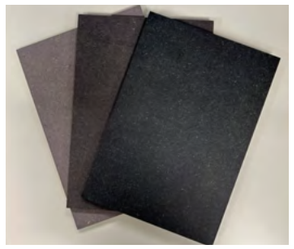
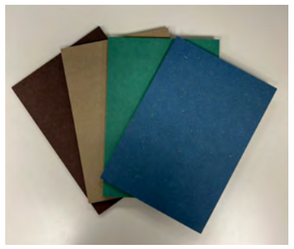
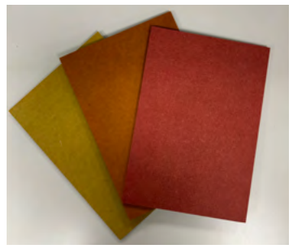
Product	pH	Density [kg/l]	Solid Content [wt%]	Description
04 Fire Retardant				
iFR740	5,5-6,5	1,34-1,37	54-56	Halogene-free stable aqueous solution without sedimentation and phase sedimentation
iFR750	6,0 - 8,0	1,4 - 1,6	50 - 60	Halogene-free aqueous dispersion
iFR760	-	-	100	Halogene-free solid/dry powder

05 Pigment Dispersion

impress Pigments for panel manufacturing: MDF, HDF, chipboard, OSB & plywood

Introducing Tabersperse: A range of colourful solutions
Welcome to the vibrant world of Tabersperse, where color knows no bounds. We are delighted to present our exquisite range of colored solutions, designed to add a splash of life and creativity to a wide range of applications. Impress Tabersperse range has the perfect solution to meet your colour needs.

Our Tabersperse color range, can enhance the aesthetics of MDF, HDF, OSB, plywood and chipboard panels by infusing them with vibrant colors
Impress offers an expansive palette of colors and shades. With our product range, the possibilities for transforming wood panels are truly endless.

Consistent and Uniform Coloration:
Consistency is key when it comes to achieving uniform coloration in wood panels. Tabersperse colored dispersions ensure exceptional color consistency, enabling the achievement of a harmonious appearance across the panels. Our dispersions are meticulously formulated to deliver consistent coloration, eliminating variations and ensuring that each panel displays the desired color with precision and uniformity.

Seamless Integration and Optimal Penetration:
We understand the importance of seamless integration and optimal color penetration in wood panel manufacturing. Our Tabersperse solutions are engineered to seamlessly incorporate into wood panel production processes, be it for MDF, HDF, OSB, plywood or chipboard. Our dispersions have excellent flow properties, facilitating effortless application and deep color penetration, resulting in panels with rich, vibrant, and long-lasting coloration.

Durability:
Wood panels are subjected to daily wear and tear, demanding durability. Our Taberperse dispersions are formulated to deliver excellent durability, ensuring that the colored wood panels maintain their captivating appearance over time. Within our Tabersperse range, you can choose from various levels of resistance to fading, discoloration, and UV damage, allowing you to create panels that maintain their striking aesthetics even in high-traffic areas or when exposed to direct sunlight.

Product	Color Shade	Color Index	Lightfastness *Blue wool scale	Solid Content [wt%]	Application
05 Pigment Dispersion					
Tabersperse Yellow 1130		PY 109	8	40.0 - 44.0	
Tabersperse Yellow 1131		PY 110	7-8	38.5 - 44.4	
Tabersperse Yellow 1142		PY 42	8	37.0 - 47.0	
Tabersperse Yellow 1143 B.C		-	3	13.8 - 15.8	
Tabersperse Yellow 1146		PY 150	7	31.0 - 37.0	
Tabersperse Red 1101		PR 101	8	70.0 - 76.0	
Tabersperse Red 1120 B.C.		-	2-3	15.5 - 17.5	Recommended for fire retardant boards
Tabersperse Red 1721		PR 176	6-7	44.0 -50.0	
Tabersperse Blue 1199		PB 15.3	7	45.2 - 55.2	
Tabersperse Green 1108 B.C.		Blend	7	41.3 - 47.3	
Tabersperse Green 1109 B.C.		Blend	3	7.40 - 9.40	Recommended for moisture resistant boards
Tabersperse Green 1110 B.C.		Blend	3	16.6 - 19.6	Recommended for moisture resistant boards
Tabersperse Green 1111 B.C.		-	3	15.1 - 21.1	
Tabersperse Black 1181 B.C.		PBK 7	8	33.9 - 39.6	
Tabersperse Black 1181/1 B.C.		PBK 7	8	32.9 - 38.9	
Tabersperse Black 1182 B.C.		PBK 7	8	40.2 - 46.2	
Tabersperse Black 1183 B.C.		PBK 7	8	46.5 - 52.5	
Tabersperse Black 1184 B.C.		-	5	21.0 - 25.0	Recommended for CPL
Tabersperse Black 1186 B.C.		PBK 7	8	42.8 - 48.8	
Tabersperse Black 1192 B.C.		PBK 7	8	46.8 - 52.8	

06 Edge Sealer

impress Edge Sealer

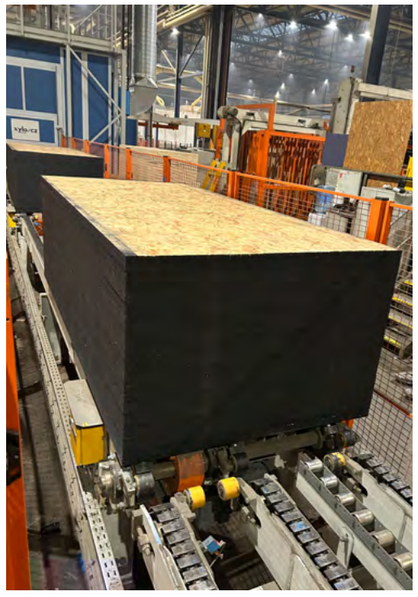
The impress Edge Sealer is a water-based coating designed to protect the edges of MDF, HDF, chipboard, and OSB boards.

This innovative product is specially formulated to seal the edges of these materials, preventing swelling due to moisture exposure during sea transport.

Edge Sealer offers exceptional moisture resistance, ensuring your boards remain intact and in optimal condition throughout their journey. Ideal for industries dealing with shipping and handling, it provides a reliable solution for safeguarding materials from environmental damage.

Product	Color shade	pH	Density [kg/l]	Solid Content [wt%]
06 Edge Sealer				
Edge Sealer Blue 1300		8.0 - 9.0	1.20 ± 0.1	35.5 – 39.5
Edge Sealer Black 1310		8.3 - 9.3	1.03 ± 0.1	21.0 – 25.0

Blue Edge Sealer

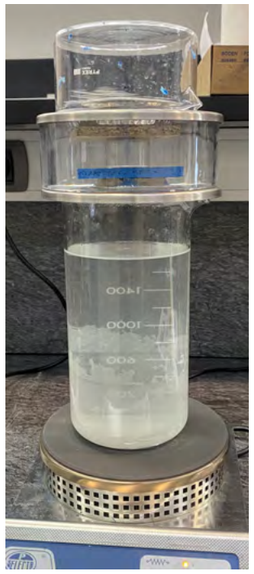


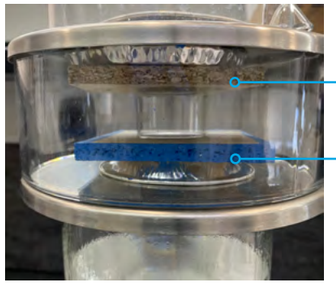
Black Edge Sealer

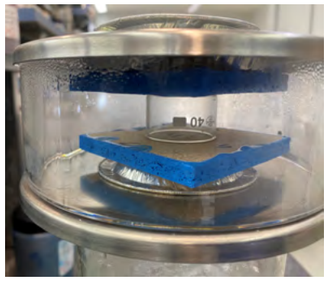
Moisture tests are conducted on chipboard samples to evaluate the board's resistance to humidity. The edges of the boards are painted using a roller and then are subjected to dry to ensure proper coating and protection. After drying, the samples are placed in a chamber at 100% relative humidity for testing the moisture resistance. The standard protocol uses a 9×9 cm board to evaluate the coating properties, measuring the edge width with a caliper before and after exposure to the humidity chamber.

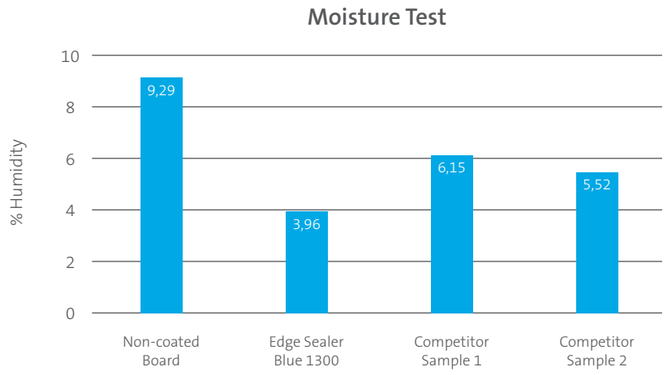
The difference in edge width before and after exposure is expressed as a percentage, indicating the relative increase in the edge size of the non-coated board compared to the boards coated with the printing product and the competitor samples 1 and 2.

Swelling Test









impress
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