

# Interiors lamination

- Diversified adhesives portfolio for the lamination of automotive interiors



**Jowapur<sup>®</sup>**  
**Jowatherm-Reaktant<sup>®</sup>**  
**Jowat-Toptherm<sup>®</sup>**



## Jowat adhesives for laminating interiors

Automotive interiors play an ever larger role in vehicle purchase decisions. Creating an inviting atmosphere in cars is the ultimate goal of interiors designers. To meet that objective, the quality of the materials used for laminating the different panels has continuously increased over time. The requirements of those new materials also have to be matched by the technical manufacturing processes as well as by the adhesives used for the lamination procedure.

Back in the 1970s and 1980s, there were still many painted metal surfaces inside the passenger cells. A-, B- and C-pillars in particular were among the last painted metal surfaces to be covered by a trim. The first trims consisted of a simple plastic part, which later was painted in a second step. Over the years, the plastic panels were laminated with foils and textiles to create trims with superior surfaces.

Jowat has continuously adapted the development of the adhesives for those lamination processes to the corresponding material combination.

Today, Jowat supplies an almost complete portfolio of adhesives for the lamination of automotive trims, comprised of PUD dispersions, reactive PU and PUR hot melts, as well as thermoplastic hot melts from its **Jowapur®**, **Jowatherm-Reaktant®**, and **Jowat-Toptherm®** series, respectively. The application range covers standard operations like press laminating and vacuum deep-drawing as well as the highly demanding semi-manual lamination or IMG procedures.



# Product overview

The table below provides an overview of our PU dispersions of the Jowapur® product series for the lamination of car interiors. The portfolio provides products for all common lamination processes such as door

side panels, windowsill door panels, armrests and ABC-pillars. The table also provides an overview of the different applications and standard material combinations for the dispersions. All key data refers to the adhesive mixed with 5 % crosslinking agent Jowat® 197.65. For specialised advice, please contact a Jowat Sales Representative.

## Jowapur® PU dispersions

PU dispersion adhesives are an important pillar for modern manufacturing processes. Today, carrier substrates can be processed with practically no overspray at all thanks to the rapid development of the application technology for PU dispersions, and the “blue caves” have become a thing of the past.

Modern PU dispersions are adapted to the special requirements of the production process, for instance short cycle times, high initial strength, as well as manual and automatic lamination. They meet the demands for resistance to temperature, changing environmental conditions and moisture, and are characterised by low VOC and fogging values.

Jowapur® dispersions are especially used for lamination with decorative thermoplastic foils made of PVC, PU or polyolefin, and for textile foam and fleece composites, as well as for genuine leather lamination in vacuum deep-drawing or stamp-press procedures for the manufacturing of instrument panels, door panels, armrests, headliners and pillar trims.

Jowat supplies a wide range of PU dispersions and specially adapted crosslinking agents, for all common laminating operations in the manufacture of car interiors.

		<b>BASIC “ALL-ROUNDER”</b>	<b>AUTOMATED PROCESSES</b>	<b>HIGH PERFORMANCE</b>	<b>COLD CONTACT BONDING</b>
		<b>Jowapur® 158.01 + crosslinker of the 197-series</b>	<b>Jowapur® 158.29 + crosslinker of the 197-series</b>	<b>Jowapur® 158.97 + crosslinker of the 197-series</b>	<b>Jowapur® 157.07 + crosslinker of the 197-series</b>
<b>Technical data</b>	Viscosity [Haake 330 1/s, mPas]	approx. 190	approx. 270	approx. 270	approx. 280
	Solids content [%]	approx. 50	approx. 43	approx. 46	approx. 41
	pH value	approx. 8.2	approx. 7.8	approx. 7	approx. 8
	Appearance of the dry adhesive film (without crosslinker)	white	white	opaque	opaque
	Reactivation temperature	> 60 °C	> 60 °C	> 60 °C	contact adhesive
	Tack at RT	●	●	●	●
	Tack at +60 °C	●	●●	●●●	●●
<b>Application data (with 5 % crosslinker)</b>	Roller application	●●	●●●	○	●
	Spraying	●●●	●●●	●●●	●●●
	Initial strength	●	●●	●●●	●●
	Final strength	●●●	●●●	●●●	●●●
	Heat resistance	●	●●	●●	●●●
	Edgefolding	●	●●	●●●	●
	Applications	flat lamination	flat lamination, mechanical edgefolding	flat lamination, manual edgefolding	flat lamination, with heat activation also 1-sided
	Material combinations	plasticised PVC, TPO foil, fibre materials, plastics (e.g. ABS, PVC, TPO)	plasticised PVC, TPO foil, fibre materials, plastics (e.g. ABS, PVC, TPO)	genuine leather, plasticised PVC, TPO foil, fibre ma- terials, plastics (e.g. ABS, PVC, TPO)	carpet, fibre materials, plastics (e.g. ABS, PVC, TPO)

The information given in this leaflet is based on practical experience and on results of tests in our laboratory, and does in no way constitute any guarantee of properties. In light of the huge diversity of materials and the fact that we have no influence either on the substrates or on the process, no liability may be derived from these indications nor from the recommendations made by our free technical advisory service. Customer trials are absolutely necessary. Before processing, please request the corresponding data sheet and comply with the indications in it!

- not suitable
- suitable / medium
- well-suited/ high
- very well-suited / very high

# Product overview

The table below provides an overview of our hot melt adhesives of the Jowatherm-Reaktant® product series for the lamination of car interiors. The portfolio provides products for all common lamination processes

such as door side panels, upper door panels, armrests, instrument panels, centre console, as well as seats and headliners. The table also provides an overview of the different applications and standard material combinations that can be laminated using the Jowatherm-Reaktant® hot melt adhesives. For specialised advice, please contact a Jowat Sales Representative.

## Jowatherm-Reaktant® reactive PU and PO hot melt adhesives

The wide range of adhesives in the **Jowatherm-Reaktant®** series provides the optimum solution for the lamination of automotive interior parts, from instrument panels, centre consoles, door side panels, pillar trims, to applications in the manufacture of seats and headliners. The adhesives have been developed specially to meet the requirements of the different lamination processes, in close co-operation with the automotive industry, its suppliers and engineering companies.

**Jowatherm-Reaktant®** products are used for laminating all common substrates like ABS, ABS blends and PP-based parts with or without a natural fibre content. A pre-treatment of the surface is only necessary for PP-based substrates. They facilitate optimum lamination results on the different parts, with decor materials like TPO foils, PVC foils\*, synthetic leather and also genuine leather. The adhesives of the Jowatherm-Reaktant® series can be processed in standard lamination processes with press and vacuum deep-drawing procedures. They meet the demands for resistance to temperature, changing environmental conditions and moisture, and are characterised by low VOC and fogging values.

\*Due to the wide range of different plasticisers in PVC foils, preliminary tests for suitability are absolutely necessary.

		<b>GENUINE LEATHER</b>	<b>“ALL-ROUND” PUR</b>	<b>REDUCED MONOMER</b>	<b>REACTIVE, WITHOUT PRE-TREATMENT</b>
		<b>Jowatherm-Reaktant® 613.18</b>	<b>Jowatherm-Reaktant® 642.00</b>	<b>Jowatherm-Reaktant® MR 642.90</b>	<b>Jowatherm-Reaktant® 629.70</b>
<b>Technical Data</b>	Viscosity [mPas]	approx. 20,000 at 140 °C	approx. 23,000 at 140 °C	approx. 17,000 at 140 °C	approx. 14,500 at 170 °C
	Processing temperature [°C]	140 °C roller application 150 °C spraying	130 °C roller application 150 °C spraying	130 °C roller application 150 °C spraying	approx. 170
	Density [g/cm³]		approx. 1.1	approx. 1.15	approx. 0.90
	Appearance	white	colourless opaque	colourless opaque	yellowish opaque
	Reactivation range [°C]	> 50 - 60	> 70	> 75	> 100
	Monomer-reduced PUR (<0.1%)	no	no	yes	not applicable
	UV tracer		yes	yes	no
	Open assembly time (film) [s]	1 - 2	5 - 10	5 - 10	approx. 19
	Reaction time [d]	1 - 3	2 - 3	2 - 3	7 - 14
<b>Application</b>	Processing	spraying, roller, nozzle	spraying, roller, nozzle	spraying, roller, nozzle	roller, nozzle
	Main applications	laminating interior parts e.g. door panels and instrument panels, easy affixing with short holding time and high initial strength e.g. for positioning cut-and-sewn materials	Automotive 3D lamination with common application and lamination procedures.  Better VOC and Fogging values compared to competitors.	Automotive 3D lamination with common application and lamination procedures.  Better VOC and Fogging values compared to competitors.	pre-coating, flat lamination, PP/NF-PP can mostly be bonded without the usual pre-treatment procedures (e.g. fluoric, corona, plasma, flame)

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# Product overview

The table below provides an overview of our thermoplastic hot melt adhesives of the Jowat-Toptherm® series for the lamination of car interiors. The portfolio provides products for all common lamination processes

such as door side panels, upper door panels, armrests, and centre consoles. The table also provides an overview of the different applications and standard material combinations that can be laminated using Jowat-Toptherm® hot melt adhesives. For specialised advice, please contact a Jowat Sales Representative.

## Jowat-Toptherm® thermoplastic hot melt adhesives

Thermoplastic PO hot melts are increasingly used as pre-coating adhesives for the flat lamination of textiles and foils by press laminating and vacuum deep-drawing, as well as in IMG procedures. A major benefit of these adhesives is that they facilitate the convenient storage of pre-coated decor materials as rolls. The materials can be coated externally, in which case there is no need to also process an adhesive in the lamination operation. The growing amount of PP-based carrier materials, usually have a natural fibre content in form of a thermoplastic matrix material combination, represent a bonding challenge due to their low surface tension. The PO hot melt adhesives of the **Jowat-Toptherm®** series are characterised by very good adhesion to PP-based surfaces, provide a high initial strength, and in contrast to reactive adhesive systems reach their final strength after cooling already.

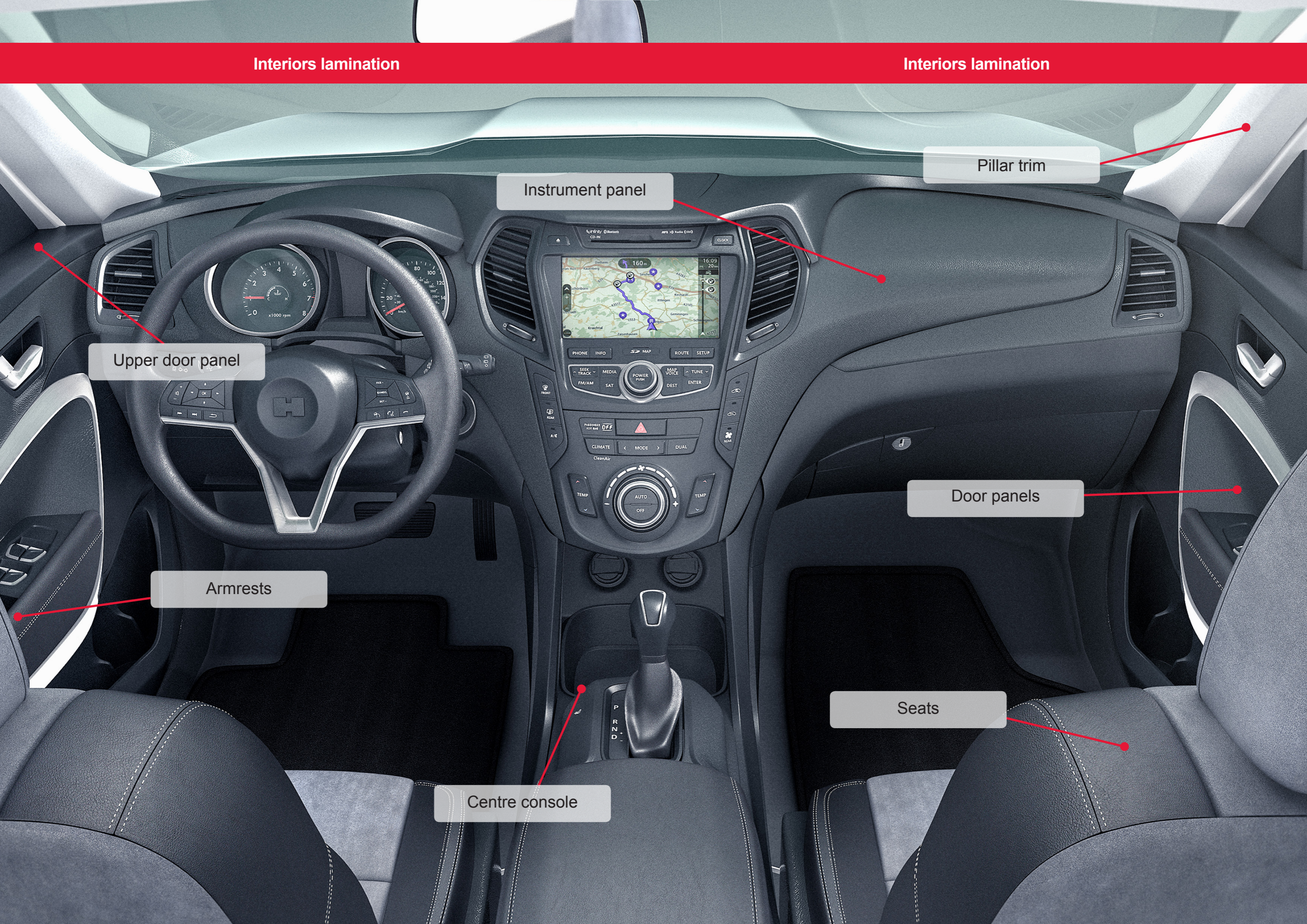
Due to the outstanding processing characteristics and the resistance to oxidation and colour stability in the melt, they facilitate a low cleaning and maintenance effort, which allows to keep service costs at a minimum.

		<b>BASIC "ALL-ROUNDER"</b>	<b>FLAT LAMINATION</b>	<b>HIGH PERFORMANCE</b>
		Jowat-Toptherm® 221.00	Jowat-Toptherm® 238.20	Jowat-Toptherm® 238.80
Technical Data	Polymer basis	PO	PO	PO
	Viscosity [mPas]	approx. 28,000	approx. 23,000	approx. 30,000
	Processing temperature [°C]	approx. 190	190	190
	Density [g/cm³]	approx. 0.90	approx. 0.89	approx. 0.90
	Softening range Kofler bench [°C]	approx. 115	approx. 115	approx. 160
	Reactivation temperature [°C]	120 - 130	120 - 130	170 - 180
	Appearance	yellow	colourless	light yellow
	Open time (film) [s]	approx. 6	approx. 10	approx. 4
	Reaction time [d]	---	---	---
Application	Processing	roller, nozzle	roller, nozzle	roller, nozzle
	Main applications	flat lamination assembly bonding PP/NF-PP without pre-treatment	pre-coating, flat lamination PP/NF-PP without pre-treatment	pre-coating, flat lamination incl. edgefolding assembly bonding PP/NF-PP without pre-treatment very high heat resistance!

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Interiors lamination

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Instrument panel

Pillar trim

Upper door panel

Armrests

Door panels

Centre console

Seats

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# Jowat | Your Partner in bonding



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**Jowat – Kleben erster Klasse**  
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