

The tesa logo is located in the top right corner of the image. It consists of the word "tesa" in a white, lowercase, sans-serif font, set against a red rectangular background. A blue swoosh element is positioned to the right of the red background, partially overlapping the word.The background of the advertisement features two men in a laboratory or industrial setting. On the left, a man with short dark hair and glasses, wearing a white lab coat, is looking intently at a piece of machinery. On the right, a man with short brown hair, wearing a light blue button-down shirt, is leaning in and pointing at the same machinery. The machinery is a complex piece of equipment with various components, including a tray with small cylindrical parts. The scene is brightly lit, suggesting a clean, professional environment.

OUTSTANDING PERFORMANCE

Our Heat-Activated Films for the Electronics Industry

BONDING EXPERTISE

Adhesive Expertise with Individual Support

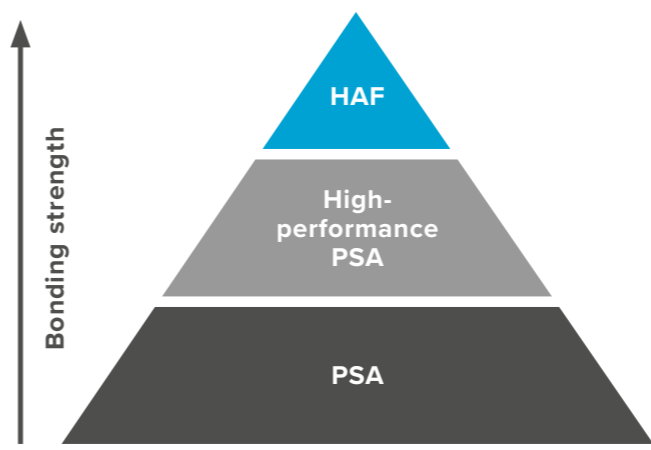


As a leading global manufacturer of adhesive solutions for the electronics industry, we offer a wide range of specially developed adhesive tapes for smartphones, tablets, and many other electronic devices. In this fast-moving business, it is necessary to keep up with the latest innovations. That is why we are continuously developing new products that will not only meet the demands of electronic devices, but also your individual technical needs.

We put you and your suppliers first by giving you the individual attention and service you deserve. Our numerous sales offices, our research and development departments, and our production facilities offer worldwide assistance wherever our customers are located. At our Application Solution Center, our technical experts evaluate your specific application needs under laboratory conditions. Our state-of-the-art equipment allows us to conduct the latest critical tests in order to help you to find the best-possible tesa solution.

Heat-Activated Films in consumer electronics

Electronic devices are increasingly miniaturized and sophisticated. Complex designs require smaller bonding areas and higher tape performance. tesa Heat-Activated Film solutions meet the most challenging demands of manufacturers and consumers over the life cycle of the devices.



- tesa HAF® solutions can achieve:**
- Comparable bonding strength to high-performance liquid adhesives
 - Excellent die-cuttability and outstanding chemical and temperature resistance
 - Immediate handling stability after heat activation

Advantages of tesa HAF® vs. double-sided tape and liquid adhesive

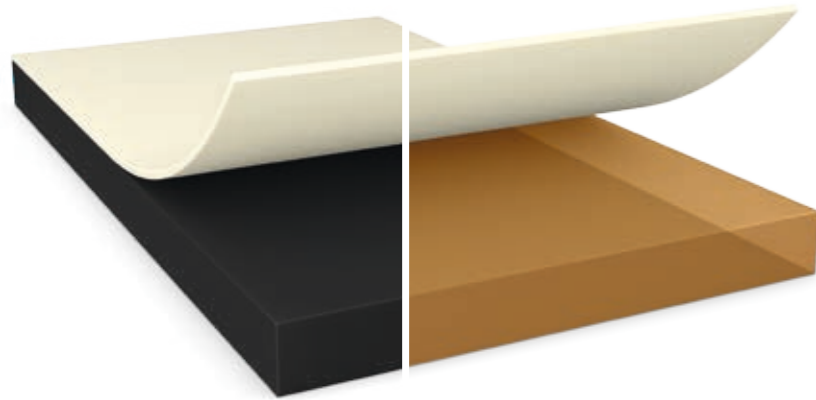
		tesa HAF®	Double-sided tape	Liquid adhesive
Performance and reliability	Bonding strength	●●●●	●●●	●●●●
	Reliability under extreme environmental conditions	●●●●	●●	●●●●
	Sealing function	●●●●	●●●●	●●●●
Processing	Low oozing	●●●●	●●●●	●
	Fast and easy application	●●●	●●●●	●
	Clean production process	●●●	●●●●	●

●●●● Very good ●●● Good ●● Medium ● Low

SUPERIOR PERFORMANCE

Excellent Solutions for Various Substrates

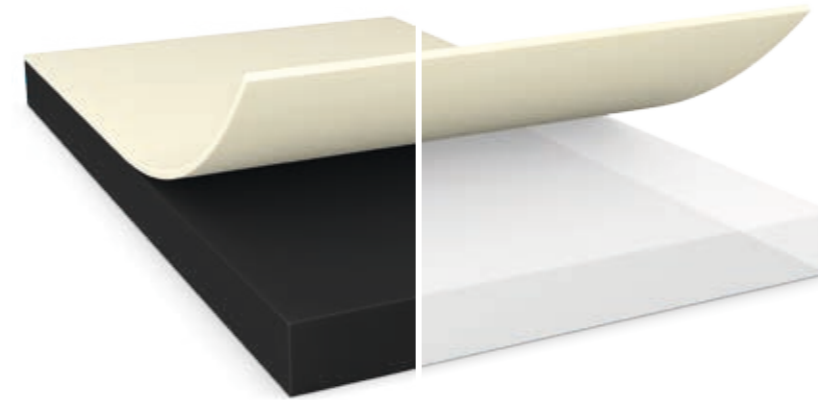
tesa Reactive HAF®



Our reactive HAF is a thermo-setting adhesive system activated by higher temperatures.

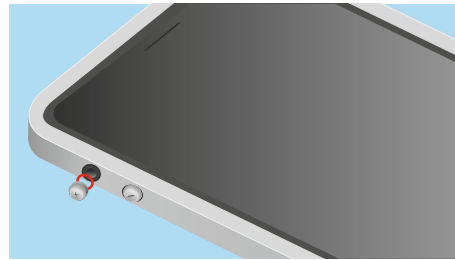
An irreversible crosslinking reaction is initiated by heat and pressure starting at temperatures above 120°C resulting in extremely strong bonds – especially on metal surfaces.

tesa Low-Temperature Reactive (LTR) HAF®

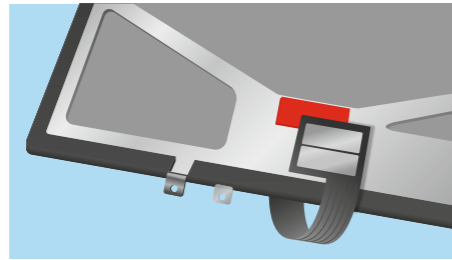


Our LTR HAF has been designed for activation at moderate temperatures.

The crosslinking starts at a bond-line temperature above 75°C. Therefore, our LTR HAF is especially recommended for reliable bonding of temperature-sensitive substrates in consumer electronics devices and accessories – particularly for materials like plastics and fabrics.



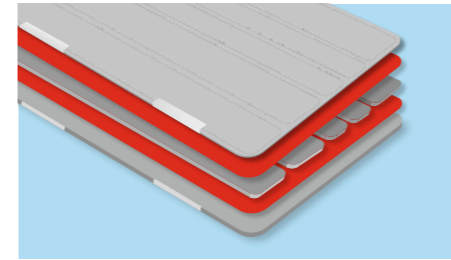
Superior bonding strength, even on small bonding areas. Very low oozing and superior die-cuttability supports stable and clean processing.



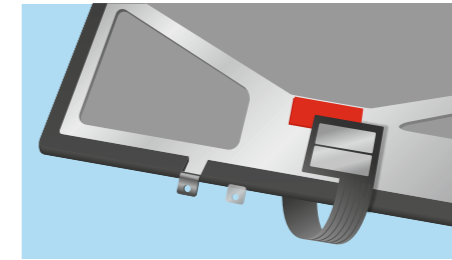
Even thin and narrow die-cuts of our HAF solutions withstand high repulsion forces of bended FPC (flexible printed circuit) applications.



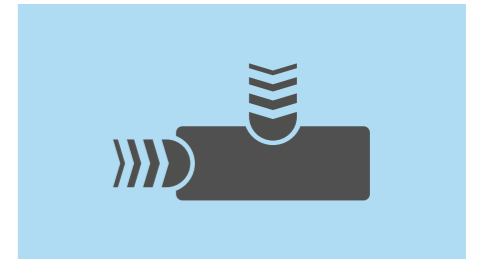
Outstanding chemical, aging, and temperature resistance as well as sealing properties make tesa reactive HAF® the perfect bonding solution for challenging environmental conditions.



Low-temperature activation enables high-performance bonding of temperature-sensitive materials like plastics, leather, and fabrics.



Low oozing and excellent die-cuttability provide a stable and high-performing solution for many structural bonding applications.



In addition to the outstanding bonding performance, our LTR HAF offers an excellent shock resistance.

Individual support

Besides offering quality products with strong features, we provide individual project support backed up by application engineers and research and development resources. Our technical experts in our Application Solution Center offer on-site support and evaluation of your individual application under laboratory conditions.

Please contact us for

- Process-simulation studies
- Assistance at your manufacturing site
- State-of-the-art testing equipment
- Tests under a wide range of environmental conditions
- Customized tests with customer substrates

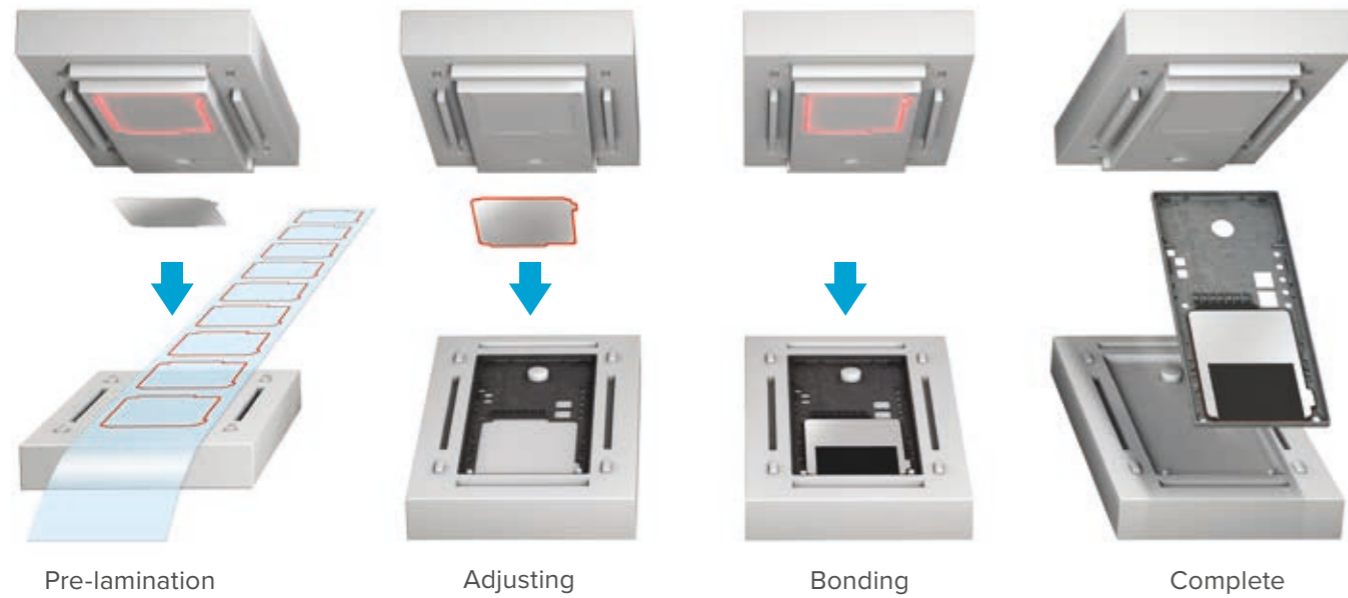


APPLICATION PROCESS

Technical Details of the Bonding Process

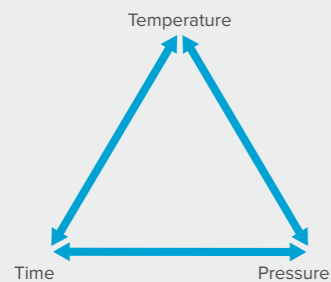
tesa HAF® processing

tesa HAF® is not tacky at room temperature and is activated by heat and pressure using a heat press.



tesa HAF® machine parameter guide

		Reactive HAF	LTR HAF	Thermoplastic HAF
Pre-lamination (wetting)	Processing methods	Heat press, hot roll laminator, industrial iron		
	Machine settings	95–120°C	60–70°C	100–140°C
		2–6 bar	1–3 bar	2–5 bar
Bonding (activation)	Application	Heat press, oven, hot roll laminator		
	Machine settings	3–10 s	5–20 s	2–5 s
		120–250°C	80–120°C	120–150°C
		5–30 bar	2–5 bar	2–5 bar
		5–180 s	10–480 s	5–15 s



The final bonding strength depends on the combination of temperature, time, and pressure. Bonding time can be decreased if bonding temperature is increased. Sufficient pressure is needed to ensure wetting.

tesa HAF® assortment overview

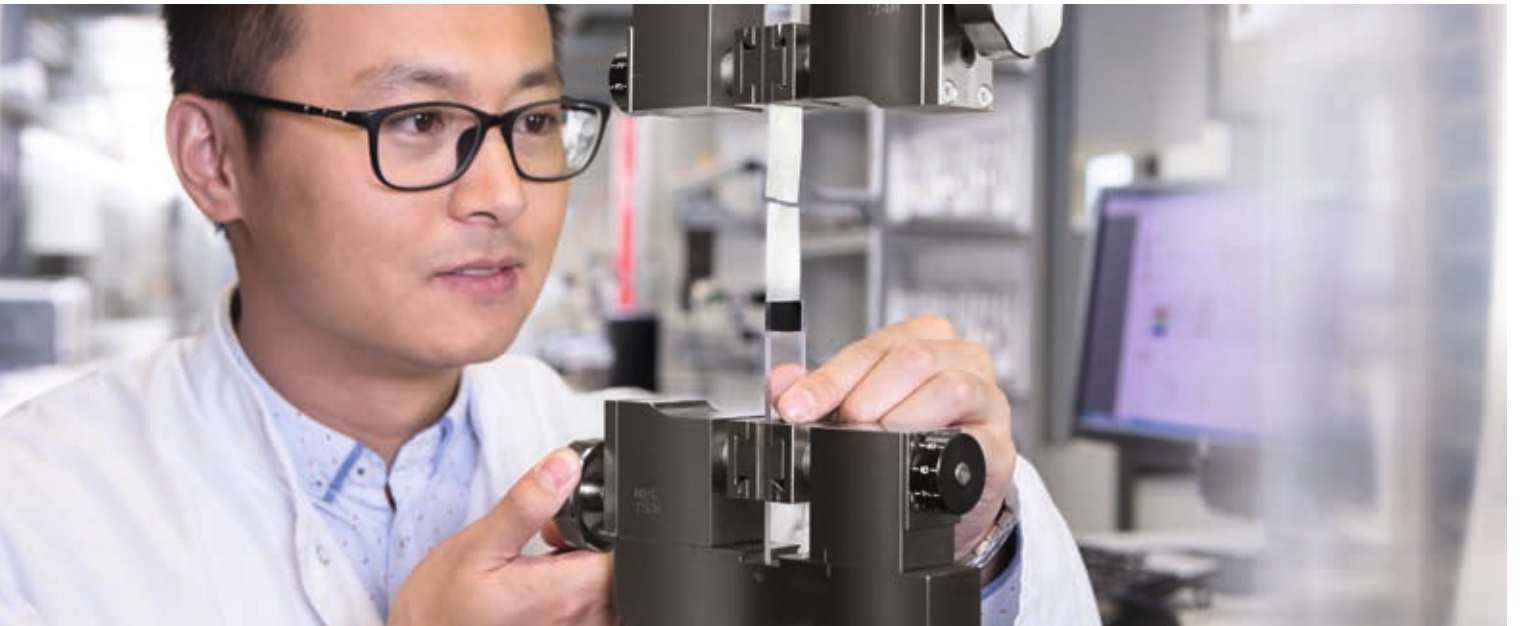
We offer a full assortment designed to meet different performance and process requirements. All tesa HAF® products provide outstanding bonding strength, excellent die-cuttability, and are free of halogen¹⁾ as well as compliant with RoHS²⁾ regulations.

		Our product assortment			
		Reactive HAF	Antishock reactive HAF	Low-temperature reactive HAF	Thermoplastic HAF
Product group description					
		Solutions for extremely strong bonds on slim bonding areas <ul style="list-style-type: none"> • Reactive adhesive • Superior chemical and aging resistance • 58493, 58495 with PET backing 	Solutions for extremely strong bonds with superior shock resistance <ul style="list-style-type: none"> • Reactive adhesive • Excellent chemical and aging resistance • Superior shock resistance 	Solutions for extremely strong bonds on temperature-sensitive substrates <ul style="list-style-type: none"> • Reactive adhesive • Excellent shock resistance • Activated at low temperature and pressure 	Solutions for very strong bonds on large bonding areas <ul style="list-style-type: none"> • Thermoplastic adhesive • Requires only low bonding pressure • 8466 with non-woven backing
Thickness cluster [µm]	5				
	10				
	20	● 58477			
	30	● 58471	● 8471 ³⁾	○ 8711	
	40				
	50	● 58470		● 58480 ○ 8710	○ 8462
	60		● 8472 ³⁾		
	70				
	80	● 58473 ● 58493 ● 8473			
	90				
	100	● 58474 ● 8474 ³⁾	● 8454	● 58484 ○ 8714	○ 8444
	110				
	120	● 58475 ● 58495 ● 8475 ³⁾		● 58485 ○ 8715	
	130				
	140				
	150	● 58476 ● 8476		● 58486	○ 8466
	160				
170					
180					
190					
200	● 58478 ● 8478 ³⁾	● 8451			
210					

● Black ● Amber ○ White ○ Transparent
¹⁾ Halogen-free based on IEC 61249-2-21 definition ²⁾ Compliant with RoHS directive 2011/65/EU ³⁾ UL file E309290



tesa® products prove their impressive quality day in, day out in demanding conditions and are regularly subjected to strict controls. All technical information and data mentioned above are provided to the best of our knowledge on the basis of our practical experience. They shall be considered as average values and are not appropriate for a specification. Therefore, tesa SE can make no warranties, express or implied, including, but not limited to any implied warranty of merchantability or fitness for a particular purpose. The user is responsible for determining whether the tesa® product is fit for a particular purpose and suitable for the user's method of application. If you are in any doubt, our technical support staff will be glad to support you.



11/2016



Our management system is certified according to the standards ISO 9001, ISO/TS 16949, and ISO 14001.