

Technical Data Sheet



technicoll® 9431

2-Component polyurethane adhesive, paste-like

Field of application

technicoll® 9431 is a paste-like 2-component PUR adhesive for bonding and repairing metals, thermosets and thermoplastic polymers.

Special characteristics

- High resistance to temperature and ageing
- Gap filling
- No sagging on vertical surfaces
- Viscoplastic, high resistance to mechanical load

Handling data and product data

Proportion of mixture	technicoll® 9431 A	technicoll® 9431 B	adhesive
Mixing ratio (volume)	100	100	
Mixing ratio (weight)	130	100	
Density	1.51 g/cm ³	1.18 g/cm ³	
Viscosity (+25 °C)	3 500 Pas	22 Pas	ca. 60 Pas
Colour	black	beige	dark grey
Pot life (+25 °C) 100 g	12 minutes		
Handling strength	after approx. 1.5 hours		
Solid content	100 %		
Processing temperature	+15 °C to +30 °C		
Way of application	one-sided		
Dilution	not possible		
Cleaning agent / material	technicoll® 8363, technicoll® 9901 (spray)		
Cleaning agent / tool	technicoll® 8362, technicoll® 9901 (spray)		
Cleaning	Solid adhesive can only be removed mechanically.		
Maximum time of storage	At least 9 months for cartridges when stored in sealed original packaging in cool and dry places.		
Preferred storage temperature	+10 °C to +25 °C		
Behaviour at low temperature	Not susceptible to frost. Densification at low temperature. Once adjusted to processing temperature: fully employable.		

Favoured substrates

- thermoplastics (e.g. ABS, PVC-u, PS)
- metal
- ceramics, stone, concrete
- thermosets (e.g. FRP, SMC, HPL)
- rigid foams
- derived timber products

Not suitable for: PE, PP, PTFE (Teflon®), POM, silicone, EPDM, PVC-p (faux leather)

Due to the large variety of possible materials and differences in adhesion behaviour hazard tests are mandatory before introducing the adhesive into the actual production process.

Surface preparation

Bonding surfaces must be dry and clean, especially free of oil, grease or release agents. In many cases, roughening the surface to be bonded improves bond strength. It is generally recommended when bonding rubber and metal.

Adhesion

Position cartridge into the bracket of an adequate dispensing gun, lock it and remove cap. Expel a small amount of the adhesive to make sure that both components flow freely. Attach mixing nozzle and lock it. Apply adhesive in a thin bead, drop or film on the surfaces to be bonded. The joint components should be assembled and clamped within the pot time. Fix the bonded parts until adhesive is solid.

Wait for a couple of days before assessing the final strength.

Curing

At room temperature, bonded substrates can be handled after approx. 90 minutes.

A lap shear strength of 1 N/mm² at +25 °C is achieved after 90 Minutes and 50 % of the final strength is achieved at +25 °C after 4 hours! Curing speed can be increased by heat.

Physical properties of cured adhesive

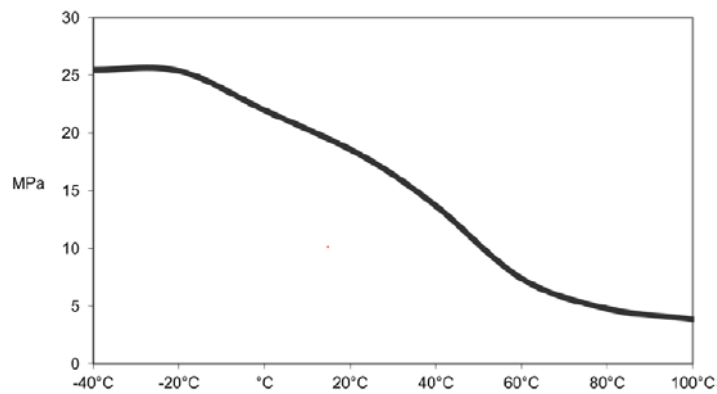
Shore hardness D	90
Lap shear strength	8 N/mm ²
Strength at breaking point	95 %
Glass transition temperature T _g	-10 °C
Coefficient of thermal expansion (CTE)	190 10 ⁻⁶ K ⁻¹ (from +30 °C to +80 °C)
Temperature range	approx. -40 °C to +100 °C

Lap shear strength (aluminium*, etched)

Aluminium (etched)	16 N/mm ²
Humidification 15 days at +70 °C	3 N/mm ²
Alternating climate test (15 cycles; D3)	16 N/mm ²
3 weeks ageing at +100 °C	16 N/mm ²
Ageing at +70 °C for 3 weeks in engine lubricants	15 N/mm ²
Ageing at +23 °C for 3 weeks in aqueous solution of hydrochloric acid (0.1 N)	12 N/mm ²
Ageing at +23 °C for 3 weeks in aqueous solution of sodium hydroxide (0.1 N)	9 N/mm ²
Ageing at +23 °C for 3 weeks in seawater	14 N/mm ²
Ageing at +23 °C for 3 weeks in diesel fuel	15 N/mm ²
Ageing at +23 °C for 3 weeks in fuel	15 N/mm ²

180° Peel strength

Lap shear strength (aluminium*, etched)



*cured for 16 h at +70 °C and 48 h at RT

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Deviating information of earlier versions is invalid.

Special notice:

All information given on this data sheet is based on our knowledge and experience at the time of printing. The information is not binding. We advise to determine the suitability of our products with respect to their intended use and method of application. Therefore, a warranty claim cannot be granted.