

TECHNICAL DATASHEET

Adhesive 1451 + Activator 1093

(No-mix system)

Description

1451+1093 is a medium viscosity, elasticised two-component adhesive system suitable for all applications where good shear and/or impact strength is required on glass, ceramics, metal and magnetic materials (ferrites), as well as on combinations of these materials. Its excellent physical properties allow it to be used even under difficult conditions, such as changes in temperature and climate.

The use of liquid activator 1093 allows 1451 to cure within 20 seconds at room temperature (approx. 23°C), it is a so-called no-mix system.

Advantages

- Optimum compromise between hardness, strength and impact resistance
- Excellent suitability for metal/glass bonding (car rear view mirror)
- Very short fixation times and reliable curing with activator
- Good processable viscosity
- Good fatigue strength under alternating thermal loads
- Solvent-free, 100% solids (100% reactive substance)
- High temperature resistance (up to 120°C)

Physical properties (liquid product)

Chemical base	1451 1093	Modified Urethane-Acrylate Methacrylic Ester
Curing System		2-component-system ("no-mix")
Shelf life	1451 1093	15 months at $\leq 25^{\circ}\text{C}$ 15 months at $\leq 25^{\circ}\text{C}$
Colour	1451 1093	Slightly yellow (cloudy) Green
Density	1451 1093	$\sim 1.13 \text{ g/cm}^3$ $\sim 1.03 \text{ g/cm}^3$
Viscosity at 25°C	1451 (DIN EN ISO 2555, Spindle 6 at 1 rpm) 1093 (DIN EN ISO 12092, Cone / plate method; shear rate 100s^{-1})	$> 90'000 \text{ mPa}\cdot\text{s}$ $5 - 15 \text{ mPa}\cdot\text{s}$

Curing properties

at 23°C and gap size $\leq 0.1\text{mm}$

Fixture time	$> 1\text{ N/mm}^2$	$\sim 20\text{ seconds}$
Functional time	$> 10\text{ N/mm}^2$	$\sim 60\text{ seconds}$
Final strength		$\sim 12\text{ hours}$

(Other temperature and/or gap size may influence the curing speed)

Physical properties (cured product)

Thermal range $- 55\text{ °C up to }120\text{ °C}$

Tensile shear strength acc. to DIN EN 1465

Curing and test temperature: 23 °C; metals corundum blasted and cleaned

Steel	$> 18\text{ N/mm}^2$
Aluminium	$> 15\text{ N/mm}^2$
Glass	$\sim 35\text{ N/mm}^2$ (material fracture)

How to use the products

- Please make sure, that the adhesive gap is $< 0.1\text{mm}$ ("smaller than")
- The activator 1093 has to be applied as a uniform film on one part only.
It consists out of 100% reactive substance and shall not evaporate.
- A sufficient amount of 1451 has to be applied as a uniform film on the other part.
- Join the parts immediately (latest after 10 minutes), fix them and do not move them before the fixture time (at least 20 seconds) has passed.
The mixing of the components is done by joining.

This work must not be carried out in the sun or on strongly heated glass surfaces. Danger of stress cracks!

The surfaces to be bonded must be flat. The adhesive has no gap-bridging properties.

Precautions

For your own safety, please refer to the information of the concerned MSDS and for the correct handling the "user instructions".

The information in this data sheet is based on the results of our research and experience. However, the suggestions herein concerning the use, application, and processing of the products (collectively, "the methods") **are non-binding recommendations only**. It is the user's sole responsibility to determine the suitability and safety of these methods, based on the user's particular purpose in using the products. Before relying on the reliability and safety of any parts that are bonded using the products, it is extremely important that the user test the reliability and safety of the parts that are bonded. Failure to do so could result in serious personal injury. Because of the use of the products are within the purchaser's sole control, Kisling Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose, arising from the sale or use of the products described herein. Kisling Corporation specifically disclaims any liability for consequential, incidental, or other damages of any kind, including lost profits. Kisling Corporation's liability for damages shall not exceed the purchase price of the products used.

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