
Damival® 13682AN90/13481 2K- Polyurethane resin

Damival® 13682AN90/13481 is a very flexible black 2-component resin on base of polyurethane.

Attributes

Damival® 13682AN90/13481 is an alternative for silicone- and epoxy resins for potting and casting as well as coating for electronic assemblies.

Damival® 13682AN90/13481 can be cured at room temperature and has the following properties:

- Usable and flexible resin, even at low temperatures of -60 °C
- For railway applications: EN45545-2HL 3
- MDI-free hardener and free of CRM substances
- Flame retardent UL94-V0
- Thermal resistance up to 150 °C
- High thermal conductivity

The properties depend on the curing stage of object.

Standards

- RoHS compliant
- ELV 2000/53/CE regulations
- REACH compliant acc. obligation (01-01-2014)
- Halogen free acc. IEC 61249-2-21 and IPC 4101B
- Thermal class B (130 °C)
- UL 94-V0

Delivery forms

The resin is available in 25 kg cans and 250 kg drums (one way).

The hardener is available in 5 and 20 kg cans (one way).

Storage

The resin should be stored in cool and dry places. Storage life of resin and hardener at max. 25 °C ambient temperature is 12 months.

Hardening

Curing at room temperature or accelerated at higher temperatures.

Processing

The resin must be stirred prior to use, as it contains fillers which may settle during storage. Avoid air introduction

during stirring.

Polyurethane resin and hardner are sensitive to moisture during the processing steps (storage, mixing, casting). The parts to be casted should be dry and clean. A preheating of the parts and/or of the resin may improve the encapsulation. A vacuum processing enhances the dielectric and mechanical properties.

Mixing can be done by machine or manually. Easy check of the quality mix thanks to the colored hardener. The gel time and the curing time depend on the mixed volume, the temperature and the thickness of the layer. Final properties are depending on the curing level.

Mixing ratio:

100:9 weight-%

100:13 vol.-%

Mechanical	Unit of measure	Conditions	Values	Test method
Shore-A-hardness		after 2 months	46	ISO 868
Elongation at break	%		53	ISO 527
Water absorption	%	24h, 25 °C	0.3	ISO 62

Thermal	Unit of measure	Conditions	Values	Test method
Glass transition temperature	°C		-60	TMA
Linear expansion coefficient	µm/m/°C		146	TMA
Heat conductivity	W/mK		0.95	DIN EN-821-2
Resistance against		thermal shock	-60/+150 °C	

Liquid phase	Unit of measure	Conditions	Values component A	Values component B	Values Mixture	Test method
Mixing ratio	Gew-%	weight-%			100:9	
Viscosity	mPas	25 °C	7,000-11,000	500-350	5,000	Brookfield ISO 2555
Viscosity	mPas	60 °C			1,000	Brookfield ISO 2555

The information on this data sheet is based on the information provided by our supplier. It does not represent any specification or agreements regarding conditions or properties. The indicated values are standard values. Deviations from those values due to production and application cannot be excluded. The information on this data sheet is addressed to experts who use it at their own discretion and at their own risk. We do not guarantee results, or accept liability for the indicated specifications or for results obtained based on the specifications. Please contact us for more detailed information. Non-toxic and toxic substances are listed on the safety data sheet.

Updated 06/21



Liquid phase	Unit of measure	Conditions	Values component A	Values component B	Values Mixture	Test method
Mixture density	g/cm ³	23 °C	1.63	1.10	1.58	
Gel time at 25 °C	min	300 g			30-50	TECAM
Topfzeit	min	RT ascending to 60 °C			10.5	

Electrical	Unit of measure	Values
Dielectric strength	kV/mm	20
Specific volume resistance at 23 °C	Ω*cm	8 x 10 ¹⁰
Dielectric constant ε at 50 Hz, 23 °C		6

Electrical	Unit of measure	Test method
Dielectric strength	kV/mm	IEC 60243
Specific volume resistance at 23 °C	Ω*cm	IEC 60093
Dielectric constant ε at 50 Hz, 23 °C		IEC 60250

The information on this data sheet is based on the information provided by our supplier. It does not represent any specification or agreements regarding conditions or properties. The indicated values are standard values. Deviations from those values due to production and application cannot be excluded. The information on this data sheet is addressed to experts who use it at their own discretion and at their own risk. We do not guarantee results, or accept liability for the indicated specifications or for results obtained based on the specifications. Please contact us for more detailed information. Non-toxic and toxic substances are listed on the safety data sheet.

Updated 06/21

