

MORE THAN
50
YEARS OF
EXPERIENCE
IN SEALING
SOLUTIONS

chemicals



FERMADUR®

Two-component, room-temperature crosslinking polyurethane potting compounds



AUTOMATED SEALING SOLUTIONS



Tailor-made chemistry for your electronic components.

FERMADUR® is the trade name for Sonderhoff's two-component polyurethane systems for the manufacture of hard to gel-like potting compounds which are placed and cured directly onto or into the component using FIP (Formed-in-Place) technology.

The systems consist of a resin basis (A-component) and a hardener (B-component) which are mixed together in a prescribed ratio, forming a bubble-free potting compound after only a few minutes.

The function of the potting compound is determined by the application and uses range from surface coating to protect against environmental effects, to encapsulating electronic components or gluing components. The flowability, reactivity, hardness classification and colour of the components can be adjusted as required.

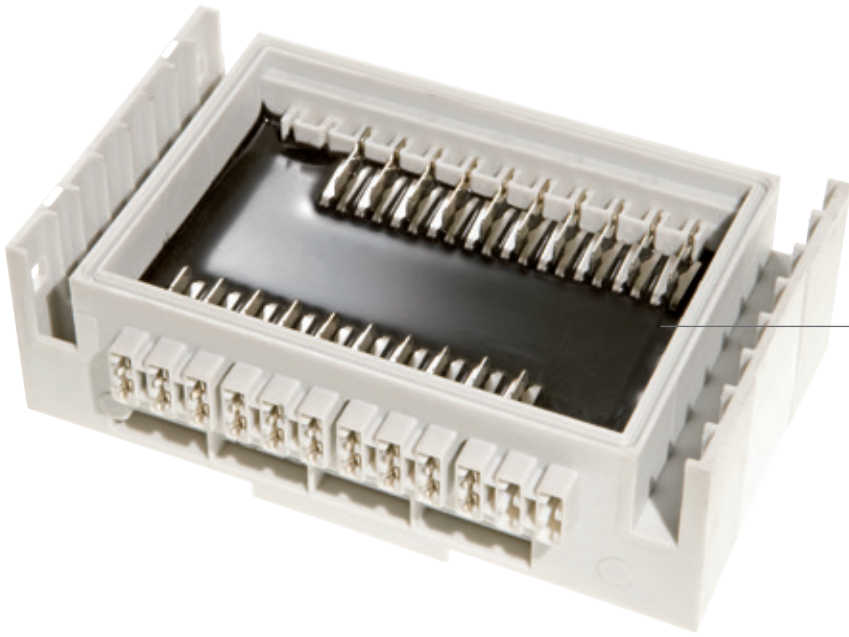
Sonderhoff can exploit the experience gained from more than 500 FERMADUR® formulations.



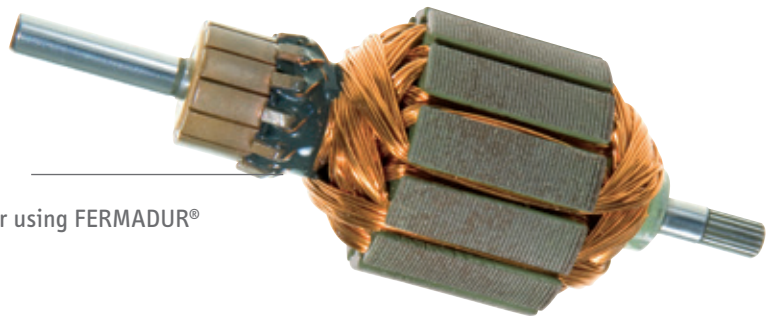
Potting of an electronic component used to control a heating unit



Potting of an automotive connector plug



Potting of a relay using FERMADUR®



Potting of a motor inductor using FERMADUR®



Potting of a transformer using FERMADUR®

Two-component polyurethane potting compounds

PROCESSING INFORMATION

FERMADUR® systems are processed using 2-component mixing and dosing machines. The recommended processing temperature is 23 °C ± 5 °C at a relative humidity between 40 and 70 %. Most FERMADUR® components can be stored in the original packaging at a temperature between + 10 °C and + 40 °C for at least 6 months.

PHYSICAL AND CHEMICAL PROPERTIES*

Properties	FERMADUR®
Appearance	black or grey, other colours upon request (including transparent)
Hardness	covering the entire Shore A range up to 80 Shore D also gel-like
Density	from 0.8 g/cm ³ to 1.7 g/cm ³
Reaction time	adjustable from 60 s to 180 min
Flame retardant	flame retardant up to UL-94 V-0 possible, even with 2 mm coating thickness
Other properties	e.g. transparent, light-fast, with good thermal conductivity, can be used for rotation moulding, dissipates static, hydrophobic, also available as a syntactic foam, with multilevel flow behaviour, treated with microbicide, abrasion resistant, greater adhesion

THE FERMADUR® RANGE

FERMADUR® A-component	Applications*	Viscosity (A) mPas	Hardness Shore 00	Density g/cm ³	Other properties*
A-610	Potting compound for sensitive electronic components, circuit boards and sensors	ca. 2.000	gel-like - A40	1,20	Consistency adjustable across the range of mixing ratios, soft and tear resistant
A-113	Potting compound for instrument and connector plugs	ca. 1.000	A45-A55	1,15	Flexible, levels very well, low shrinkage, low surface tension
A-606	Special potting compound for electronic components	ca. 1.200	A45-A60	1,20	Flexible, mechanically particularly stable, tensile strength approx. 7 Mpa, elongation at break approx. 350%
A-134	Potting compound for sensors, circuit boards, electric switches and sensor elements	ca. 1.800	A60-A75	1,35	Flexible standard systems for electronics in the automotive industry, listed in various OEMs, good adherence
A-125	Potting compound for plugs	ca. 1.500	A65-A75	1,20	Flexible potting compound, low shrinkage, low surface tension
A-203	Potting compound for transistors	ca. 1.200	A60-A80	1,20	Flexible, for sensitive electronic applications, low shrinkage, low surface tension
A-680 UL2	Potting compound for sensors and circuit boards	ca. 7.000	A65-A80	1,60	Conforms to UL94 V-0 listing at 2 mm, elastic
A-690 UL1	UL94 listed potting compound for transducers	ca. 6.000	D80-D85	1,60	UL94 V-0 listing at 1.5 mm, hard, good thermal conductivity
A-117	Potting compound for transformers, voltage transformers, capacitors, control units	ca. 23.000	D60-D90	1,70	Hard, thermal conductivity 0.9 W/mK, conforms to UL94 V-0 at 3 mm
A-111	Potting compound for sensors or circuit boards	ca. 300	gel-like - A60	1,25	Transparent, soft to gel-like, for sensitive electronic applications
A-180	Potting compound for light diodes	ca. 500	A60-A80	1,25	Transparent, UV stable, tough-hard, temperature stable up to 165°C, high chemical resistance
A-173	Potting compound for cable sheathing or moulded parts for cable routing	ca. 1.000	A50	0,80	Slightly foaming, flexible, high longitudinal water tightness achievable
A-120	Adhesive for panes in enclosures	ca. 200.000	D25-D40	1,30	Tough-hard, good adherence on various substrates, high mechanical stability, can be used as a glue, highly thixotropic
A-187	Rotation moulding compound for ferrules	ca. 120.000	D50-D65	0,70	Hard lightweight potting compound, syntactic foam with low density, non-drip
A-172-2-CON	Rotation moulding compound for ferrules	ca. 250.000	D80	1,40	Non-drip, high stability and chemical resistances, static dissipative potting compound
A-640	Coating for conveyor belts	ca. 23.000	A70-A80	1,25	Flexible, particularly tear resistant
A-196-4F	Potting compound for filter end caps and adhesive for filter cartridges	ca. 1.200	D30-D40	1,20	Microbicide, tough-hard, good adherence to various substrates, two-step flow behaviour available

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10 good reasons for using FERMADUR® *


1. FERMADUR® systems are the most suitable for sealing industrial components
2. After curing, FERMADUR® systems develop a crosslinked structure which is extremely resistant to environmental effects, such as humidity, dust, temperature and mechanical impacts
3. FERMADUR® systems react at room temperature in 1 – 180 min and although a furnace can reduce the reaction time considerably, it is not a necessity
4. FERMADUR® systems achieve particularly good adhesion to parts due to the chemical reaction of the two components on the carrier material
5. FERMADUR® systems offer exceptional long-term behaviour and are distinguished by high heat resistance and an extremely low expansion coefficient
6. The viscosity of FERMADUR® systems can be regulated from a thin fluid to a thick paste
7. FERMADUR® systems are also available in transparent and light-fast formulations
8. FERMADUR® systems have low shrinkage and low surface tension, very good dielectric properties and also very high impact strength
9. Processing machines for FERMADUR® systems can be adapted flexibly and quickly to other components at any time
10. By using FERMADUR® systems even small product series become profitable



We supply worldwide to more than 50 countries and our customers produce annually more than 300.000.000 seals with our products.

* The description of the possible fields of use of our products as well as the technical data and values only have a general character and do not mean that a certain product can be used under all conditions in the respective field of use. In this respect, the stated field of use is not a binding specification or usage provision.

Due to the great number of environment variables and their influences (e.g. temperature, test specimens, size, interaction with substrates, influence of machines, or the like) you as our customer must check whether the product is suitable for your specific field of use. We will be pleased to assist and advise you in this respect.

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