

Technical Information

ALBIFLEX® 348

ALBIFLEX® 348 is a Bisphenol-A-epoxy-silicone block copolymer resin which is used to manufacture high-performance elastomers. ALBIFLEX® 348 is liquid at ambient temperature, epoxy reactive and cures with all aliphatic and cycloaliphatic epoxy resin curing agents. It can be processed by all conventional casting or moulding techniques. The specially designed block copolymer structure of ALBIFLEX® 348, made up of epoxy and silicone segments, provides an outstanding combination of properties:

- High thermal shock resistance and temperature stability
- A glass transition temperature that is less reduced compared to other plasticizers
- Hardness between Shore A 30 and D 40, depending on the curing agent used, with excellent elongation
- High mechanical stability
- Excellent adhesion on most substrates
- Lower water vapour permeability than silicones
- Very low halogen content

Upon curing ALBIFLEX® 348 forms a segmented molecular structure consisting of soft polysiloxane and rigid polyepoxy segments. The combination of polysiloxane and epoxy units in the polymer structure creates an elastomeric material combining the outstanding electrical and thermal properties of silicones with the high mechanical strength and the excellent adhesion of epoxy resins.

Applications

ALBIFLEX® 348 is particularly well suited for use in elastic bonding, jointing and sealing compounds in electrical/electronics applications, for use as a binding agent in high-quality coating systems for printed circuit boards and as a base polymer for potting and casting compounds for electronic components. Along with excellent mechanical properties, ALBIFLEX® 348 provides outstanding compatibility with aromatic resins and hardeners.

Formulations and Processing

ALBIFLEX® 348 can be cured with almost any epoxy resin curing agent including all kinds of aliphatic or cycloaliphatic amines and amides, acid anhydrides and catalytic curing agents (e.g. tertiary amines and boron trifluoride complexes). Elastomer products with high thermal stability, strength and elongation at break can be obtained by curing with cycloaliphatic amines, anhydrides, or DICY. ALBIFLEX® 348 can also be cured with resin/curing agent pre-adducts or pre-condensates or with mixed curing agent systems.

ALBIFLEX® 348 shows only limited compatibility with aromatic amines. Suitable curing agents include pre-condensates, adduct and mixed curing agent systems. Curing agents should be avoided which show turbidity (i.e. increased turbidity as compared to ALBIFLEX®) upon mixing with ALBIFLEX® 348 as this is an indication of incompatibility. However, possible whitening during curing is not an indication of a problem but instead of the desired separation in soft and rigid phases.

ALBIFLEX® 348 can be formulated with other epoxy resins, reactive diluents, plasticizers, etc. for further modification of finished product properties. Since ALBIFLEX® 348 has only limited compatibility with aromatic epoxy resins (e. g. formulations based on Bisphenol A–F or novolac), formulations with these resins must include solubilizing aliphatic or cycloaliphatic–based resins, diluents, etc. Examples of suitable solubilizing agents include hexanedioldiglycidylether and cycloaliphatic epoxy resins. Formulations of this type can be made with extremely high hardness.

Note

As mentioned above, ALBIFLEX® 348 has limited compatibility with aromatic resins and thus is not suited for use in elastifying aromatic epoxy resins. For applications of this type we recommend ALBIFLEX® epoxy–silicone prepolymers (adducts) formulated with curing agents such as phenol novolac resins to provide enhanced compatibility. Further information on these products can be provided on request.

Technical data (no specification)

Property	Unit	Typical Values
Appearance		yellowish, opaque liquid
Density @ 23 °C	[g/cm ³]	0.98 – 1.04
Viscosity @ 25 °C	[mPas]	35 000 – 65 000
Epoxy equivalent weight	[g/mol]	1 100 – 1 350
Storage life	[months]	max. 6*
Packaging		25 kg pail, 200 kg drums

*if stored in the original unopened container

05/20

This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.

Evonik Nutrition & Care GmbH
 Charlottenburger Straße 9
 21502 Geesthacht, Germany
 Phone +49 4152 8092-0
 Fax. +49 4152 79156
www.evonik.com/interface-performance
interface-performance@evonik.com

