



KNOWLEDGE



EDUCATION

BETTER
RESULTS
THROUGH
KNOWLEDGE

Chemical resistance of silicones

FACTSHEET



GLOBAL LEADER IN ADHESIVE TECHNOLOGIES

Bostik is one of the largest adhesive and sealant companies. Worldwide, we employ some 6,000 people in 50 countries across five continents. Our customers come from diverse markets, most notably the industrial manufacturing, construction and consumer sectors.

SMART INNOVATIONS

Our smart identity is underpinned by innovation. We pursue innovation vigorously, applying the latest technological advances to developing 'smart' adhesives. Our archives are laden with examples of Bostik technologies that have disrupted markets - from potato starch-based wallpaper paste to elastic attachment adhesive for diapers.

Today, our commitment to innovation is as strong as ever. We innovate with our customers through a global R&D network, comprising three international Smart Technology Centres and 11 regional centres. And we differentiate our business through this investment. That's why in 2014, 15% of Bostik sales came from products launched in the previous three years.



Chemical resistance of silicones

GENERAL INFORMATION

With regards to the effects of solvents and industrial chemicals on silicone rubber, the following data has been compiled:

Silicones are chemically inert and are attacked by very few common materials. Among them are concentrated sulphuric acid, hydrofluoric acid and, after long term exposure, high pressure steam. Like any elastomer, silicone has a tendency to physically absorb those materials with a solubility parameter near its own. This absorption may cause the rubber to swell and to soften slightly. In a few applications, this volume increase is advantageous.

For example, a silicone rubber gasket exposed to certain solvents will swell to form a tighter seal. The change undergone by silicone rubber in contact with an absorbed solvent is primarily physical. After the solvent has completely evaporated, the silicone rubber will return to its original physical properties.

LIMITATIONS & LIABILITY

Bostik Sealing & Bonding specialises in sealants for building and glazing joints. Knowledge of, and experience in chemical resistant sealants and joints is limited. Chemical resistance strongly depends on concentration, temperature and exposure time.

This is why Bostik gives no guarantee on chemical resistance. However we can, without any warranty, provide the knowledge and experience of our raw material supplier in the format of this chemical resistance list. It is the responsibility of the user to verify by his own tests if the product is suitable for the application.



WARRANTY

Bostik warrants that the product complies, within its shelf life, to its specification. The liability shall in no case exceed the amount fixed in our Condition of Sale. In no event is Bostik liable for any kind of incidental or consequential damages whatsoever.

The following table shows silicone resistance to various common materials. It indicates the volume change which may be expected from silicone rubber submerged in a chemical or solvent for one week at room temperature. The following definitions for solvent resistance were arbitrarily assigned:

- 1 = excellent, less than 10% volume change
- 2 = good, 10-25% volume change
- 3 = fair, 25-75% volume change
- 4 = poor, greater than 75% volume change
- 5 = disintegrates

ACIDS

Citric	1
Hydrochloric, 3% and Conc.	1
Hydrofluoric	5
Phosphoric, dilute	1
Sulphuric, 10%	1
Sulphuric, Conc.	5
Nitric, 7% and Conc.	1-2
Acetic, 5% and Conc.	1

BASIS

Ammonium Hydroxide, 10%	1
Ammonium Hydroxide, Conc.	1
Potassium Hydroxide	1
Sodium Hydroxide, 5% and 50%	1

INORGANIC CHEMICALS

Anhydrous Ammonia	1
Sodium Chloride, 10%	1
Hydrogen Peroxide, 3%	1
Sodium Carbonate, 20%	1
Water / Water 70 Hrs @ 100°C/212°F	1

ORGANIC CHEMICALS

Detergents	1
Freon 12	2
Freon 114	3
Methyl Chloride	3
Tricresyl Phosphate	1

HYDRAULIC FLUIDS

Hollingshead, H-2	1
Hollingshead, H-2, 70 Hrs @ 100°C/212°F	2
Skydrol 500	3
Skydrol 8000 also after 70 Hrs @ 100°C/212°F	1
Silicate Base	1

OILS

ASTM#10.1 aliphatic, 70 Hrs @ 150°C/300°F	1
ASTM#30.1 aromatic, 70 Hrs @ 150°C/300°F	3
Castor 0.1	1
Diester oils	2
Linseed oil / Mineral oil	1
Silicone oil also after 70 Hrs @ 150°C/300°F	3

SOLVENTS

Acetone	3
Butyl Alcohol	2
Carbon Tetrachloride	4
Diaceton Alcohol / Ethyl Alcohol	1
Gasoline	4
Jet Fuel, JP4	3
Mineral Spirits & Toluene	4

Disclaimer
 All information in this document and in all our other publications (including electronic ones) is based on our current knowledge and experience and is the exclusive (intellectual) property of Bostik. No part of this document may be copied, shown to third parties, reproduced, communicated to the public or used in any other way without Bostik written consent. The technical information in this document serves as an indication and is non-exhaustive. Bostik is not liable for any damage, either direct or indirect, due to (editorial) errors, incompleteness and/or incorrectness of this document. This includes, but is not limited to, incompleteness and/or incorrectness due to technological changes or any research conducted between the date of publication of this document and the date on which the product is acquired. Bostik reserves the right to amend the wording of this document. Bostik cannot be held liable for any damage, either direct or indirect, due to the use of the product depicted in this document. The user must read and understand the information in this document and other documents relating to the products prior to the use of the product. The user is responsible for performing all the requisite tests to make sure that the product is suitable for its intended use. We have no influence in what way the product is applied and/or any circumstances relating to events occurring during storage or transport and therefore we do not accept any liability for damage. All deliveries are made exclusively in accordance with our general terms of conditions which have been filed at the Dutch Chamber of Commerce.