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Chemical resistance of sealants

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 8 regional centres. And we differentiate our business through this investment.



Chemical resistance of sealants

GENERAL INFORMATION

With regards to the effects of solvents and industrial chemicals on sealants, the following data has been complied:

Silicones are short-term resistant to diluted chemical exposure. 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 has been producing, supplying and servicing its products for the building industry for more than 40 years. Typical applications are durable elastic sealants used in facades, glazing systems, sanitary areas and industrial applications.

Bostik has conducted extensive laboratory life cycle tests on its sealants over the years, as well as practical follow-up tests while the sealants are in service. Based on these tests, typical life expectancy experienced is 10 years, subject to various external factors and conditions.

One of the most important factors influencing the life expectancy of the sealant is its application. Joint dimensions, preparation of and compatibility with the substrates etc, all have a tremendous influence on the life expectancy or failure of the sealant.

Therefore, external factors, such as those mentioned below are explicitly excluded from this life expectancy statement:

- a. any installation or application not in compliance with Bostik's technical data sheets, safety data sheets, directions, instructions or precautions in use, such as improper installation/poor workmanship and poor engineering,
- b. any incompatibility with materials and substrates,
- c. any movement of the construction resulting in stresses on the sealant which exceed the maximum, any movement accommodation on elongation and/or compression as mentioned in Bostik's technical datasheets,
- d. the sealant is applied when shelf life is expired,
- e. any use deviating from normal, proper use, any use not in compliance with Bostik's directions, instructions or precautions and any use contrary to or not in line with the proper purpose of the sealant,
- f. neglect of proper care and poor maintenance level or maintenance not in compliance with Bostik's directions, instructions or precautions,
- g. any external factors, not only but explicitly including UV radiation, any chemical influences, any environment issues, such as for instance moisture, lack of ventilation, heat, defective walls, floors, ceilings, constructions, characteristic features of the soil.

This Bostik Life Expectancy Statement excludes growth of mould, mildew and/or fungus, subject to the aforementioned conditions and external factors.

This document is provided for general information purpose only and is therefore not binding for its author.

This Bostik Life Expectancy statement concerns the general, normal use of the sealants only and does not take into account any special or other use.

For applications with continuously contact of chemicals, please contact your local technical representative of Bostik. This document is only providing information of brief contact with chemicals, such as cleaning.

The table at the next page shows resistance to various common materials. It indicates the volume change which may be expected from cured sealant submerged in a chemical or solvent for one week at room temperature. behaviour in change depends on concentration and time of exposure. 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



	Sil. Neut.	Sil Acid	Hybrid	PU
ACIDS				
Citric		1		
Hydrochloric, 3% and concentrated		1		
Hydrochloric		5		
Phosphoric, dilute		1		
Sulphuric, 10%		1		
Sulphuric, concentrated		5		
Nitric, 7% and concentrated		1-2		
Acetic, 5% and concentrated		1		
BASIS	Sil. Neut.	Sil Acid	Hybrid	PU
Ammonium Hydroxide, 10%		1		
Ammonium Hydroxide, concentrated		1		
Potassium Hydroxide		1		
Sodium Hydroxide, 5% and 50%		1		
INORGANIC CHEMICALS	Sil. Neut.	Sil Acid	Hybrid	PU
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	Sil. Neut.	Sil Acid	Hybrid	PU
Detergents		1		
Freon 12		2		
Freon 114		3		
Methyl Chloride		3		
Tricresyl Phosphate		1		
HYDRAULIC FLUIDS	Sil. Neut.	Sil Acid	Hybrid	PU
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	Sil. Neut.	Sil Acid	Hybrid	PU
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	Sil. Neut.	Sil Acid	Hybrid	PU
Acetone		3		
Butyl Alcohol		2		
Carbon Tetrachloride		4		
Diaceton Alcohol / Ethyl Alcohol		1		
Gasoline		4		
Jet Fuel, JP4		3		
Mineral Spirits & Toluene		4		

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