



KNOWLEDGE



EDUCATION

BETTER
RESULTS
THROUGH
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OUR MISSION



SUPPORTED BY

Leaching of Silicone

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.



Leaching of Silicones

GENERAL INFORMATION

Syneresis in chemistry, is the extraction or expulsion of a liquid from a gel. An clear example of syneresis is the collection of whey on the surface of yogurt.

Sometimes a small transparent oily separation is visible on top of the silicone mastic when a cartridge is opened. In the Sealing & Bonding 'World' we also call this syneresis, 'leaching'.

DISCUSSION

Leaching is a classic "syneresis" liquid/solid separation, it is a well-known physical phenomena. We found out that the liquid phase contains all the inputs of the sealant apart from the filler : Polymer + Plasticizer + Crosslinker + Catalyst + Additives.

The liquid phase isolated from the sealant is curing in presence of moisture. We believe that the filler network behaves as a sieve and the leached liquid is migrating through it. This phenomena might be due to a pressure variation in the cartridge. Night/day temperature variation helps to create depression.

In the cartridge leaching can be observed at the top of the material and will occur at lower silicone grades. What sometimes also can be observed is the presence of a small amount of air just above the leached liquid. Pressure variation of that air could create a small depression at the top of the cartridge that could pull the leached liquid through the filler network. Leaching was most of the time observed in oil-diluted sealant, but we have also seen leaching with 100% sealant.

OUR RECOMMENDATION

Leaching is inherent to this technology. We cannot predict whether a cartridge will have some leaching or not.

Leaching is caused by aging of the product and occurs with lower qualities of silicone. Leaching is generally not noticed because it re-mixes in the nozzle during application.



Leaching can be removed by the user before applying of the silicone sealant. It has no impact on the properties of silicone sealant. Craftsman and end-users can use the silicone sealant without any risk after removal of the leached liquid.

MORE INFORMATION

If you need more information, please contact your local Bostik Sales Representative.

LIABILITY

All supplied information is the result of our tests and experience and is of general nature. However they do not imply any liability. It is the responsibility of the user to verify by his own tests if the product is suitable for the application.