Technical bulletin TB122013-014

Syneresis & Silicones

Introduction
Sometimes a small clear oily separation is visible when a cartridge is opened. This we call 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 we always observe the leaching at the top. We also observed 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 to the customer
Leaching is inherent to the product. We cannot predict whether a cartridge will have some leaching or not. Leaching can be removed by customer before usage of the sealant. It has no impact on the properties of sealant. Customer can use the sealant without any risk after removal of the leached liquid.

Feedback from our customers
Leaching was accepted by our customers as being part of our product. Our customers inform their customers whenever they get claims concerning leaching.

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