



Shelf Life of RJR B-Stage Adhesives

A frequent question of RJR adhesives is the shelf life. Unfortunately, this is not a simple answer in our industry. The storage recommendation for RJR Polymers adhesives has been 7 months @ RT. (22C). This shelf life has been adequate for certain applications with no problems. This shelf life is; however, not adequate for applications with smaller process windows determined by package configuration and process conditions. These types of packages tend to have deep leads that the adhesive needs to flow down and seal in tight angles and crevasses in the package topography. As the adhesive ages it begins to lose some of its flow and no longer can get into the crevasses required to make a leak free seal. The flow characteristics of an adhesive is referred to as its rheological characteristics.

RJR has been addressing the issue of shelf life and its adhesive systems. Our biggest dilemma has been our vast variety of customer applications and processes. Different package configurations and sealing processes have dramatically different process windows. The success of these process windows relies not so much of the adhesion of our products but the Rheology of the materials as they proceed through our customer's cure profiles. This age change in Rheology is more prominent than changes in adhesion and bulk property performance of our product. This makes it impossible to provide customers with a precise shelf life from our database. What we have found that with the majority of customers, our standard recommendation works.

Recent flow studies of RJR adhesive systems show minimal detectable changes in Rheology over a 6-month period when stored at 3°C to 8°C. Ambient temperature storage shows a gradual loss of flow over the same 6-month period of time. Freezing of the adhesive also extends the life of the adhesive, but frozen adhesive is very brittle and may be easily chipped from the lid before it is cured. This presents many precautions that need to be taken when handling frozen materials. RJR does not recommend frozen storage due to adhesive chipping issues.

For the reasons above, when our customers are really concerned with the materials shelf life, RJR highly recommends that, that customers perform a shelf life study for their particular package and sealing process. If parts are anticipated to be stored for more than a month before use, it is highly recommended that the parts be stored in a refrigerator. This will maximize the consistency of the performance of RJR B-staged adhesives.

If you have any questions or would like assistance in setting up a specific shelf life study, please call RJR customer services at (510) 638-5901.