

From customer request to product: White and low-odor 2C acrylic adhesives Part 1

Dr. F. Menk

In the past year, our sales staff repeatedly approached us with customer requests for two product types. On the one hand, there was the question of white two-component (2C) acrylic adhesives and, on the other hand, those with a significantly reduced odor. We then started to implement these customer needs in two development projects.

When developing the two-component acrylic adhesives with a significantly reduced odor, it is necessary to replace the basic building block of classic products: methyl methacrylate (MMA for short), which is responsible for the characteristic and very intense smell. Although there are products on the market based on MMA whose description shows a low odor, in our tests we could not find a remarkably reduced odor compared to standard formulations with any such products. Therefore, our approach to the formulation was to use components that have a significantly lower vapor pressure compared to MMA (i.e. under the same conditions, less of the substance is released into the air) and which, in our opinion, have a more pleasant smell. In addition, the challenging basic condition was that the chemical and mechanical properties of the new products had to be comparable to those of current products. In the successful implementation of this project, we benefited from our extensive experience in the field of anaerobic adhesives, and were able to quickly show the first promising results. In the meantime, we have developed various formulations in this context and have now launched the Drei Bond 8662, the first product on the market.



Based on this first product, we have now started to present our implementation of the low-odor 2C acrylic adhesives to customers and want to develop a broader portfolio together. If you are interested, please contact us at any time about this new product type. We look forward to working with you to find the right product for your project.

Our first approaches regarding the development of white 2C acrylic adhesives quickly led to the first positive results. Our initial enthusiasm, however, soon suffered a major dampening, as all of the formulations turned yellow within a short period of time after curing. After an initial optimization process, we were able to achieve a significant improvement and keep up with the level of products on the market (see Figure 1), but we still have not achieved our goal. Accordingly, we are continuing the development project and will inform you about progress as soon as possible.

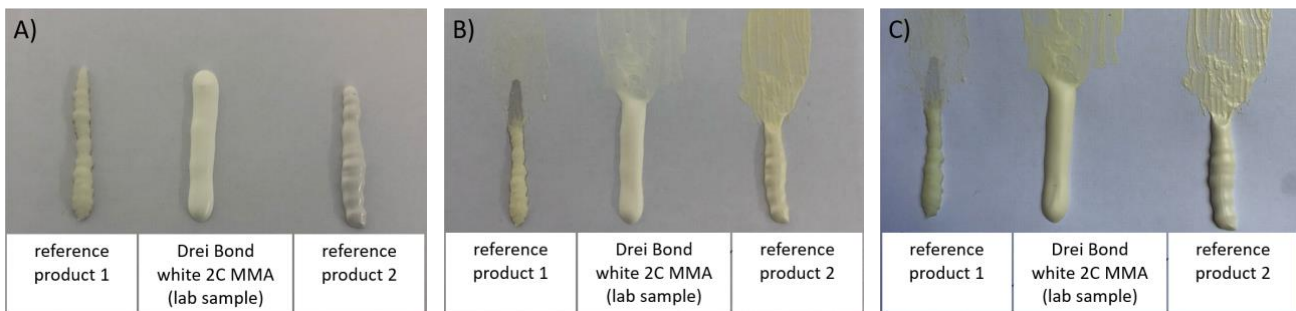


Figure 1: Images of a white 2C MMA formulation from Drei Bond after the first optimization process and two reference products available on the market.

- A) directly after dosing
- B) after 4 hours
- C) after 1 week

All products show a clear yellowing over time.