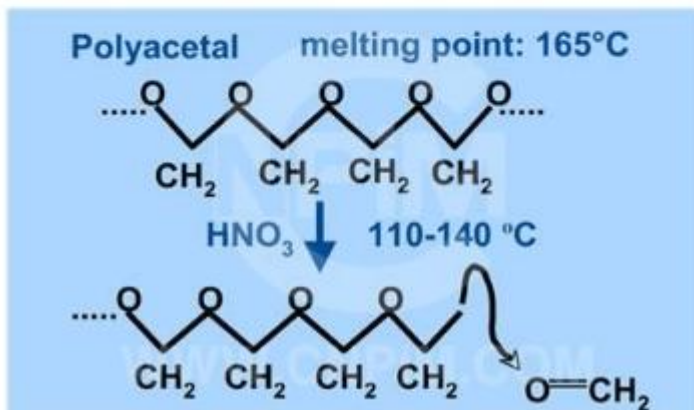
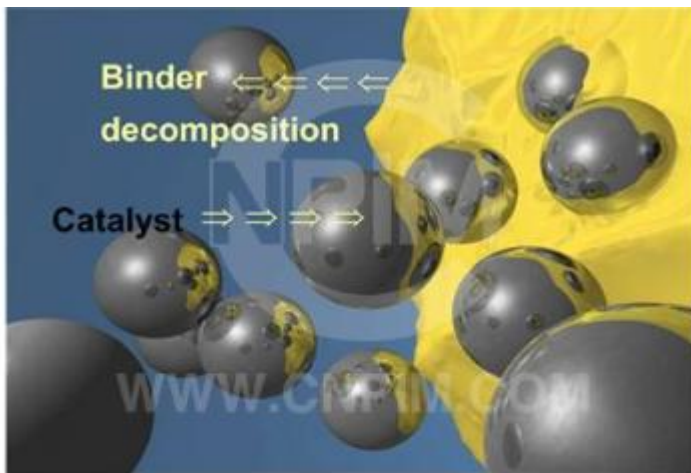


Introduction to Degreasing Process - Catamold Method

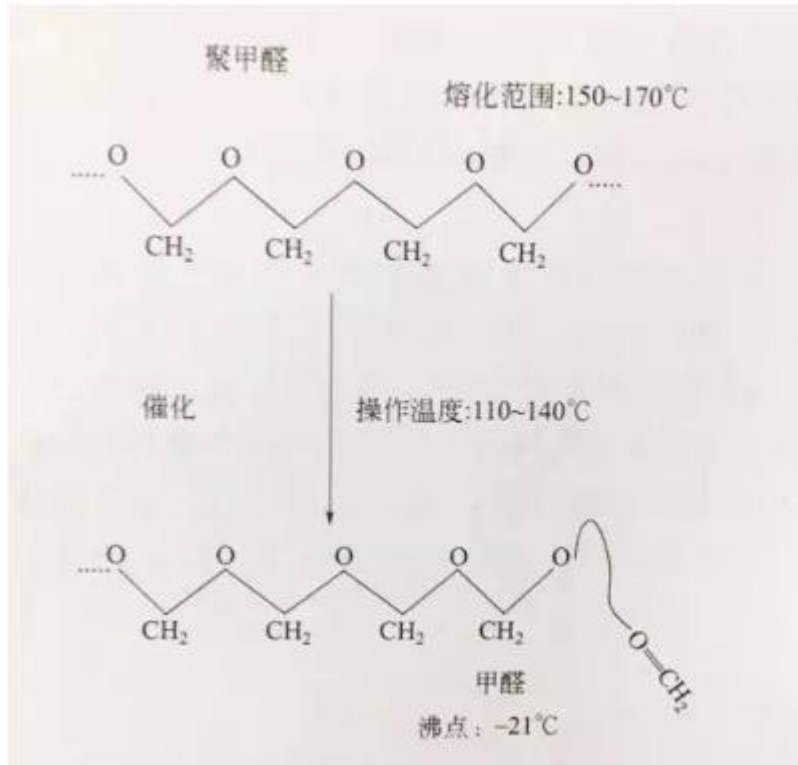
There are many kinds of degreasing processes. Today, we introduce one of them, Catamold.



Catamold method is a one-step degreasing method developed by Bloemacher of BSAF Company in Germany in the early 1990s. It is a catalytic degreasing method.

The main technical feature of this method is to use polyformaldehyde resin as binder and catalytic degreasing in acid atmosphere. Using long chain polyformaldehyde resin as binder and using polarity of polyformaldehyde resin to connect metal powders. It can be suitable for a wide range of powders.

Polyformaldehyde resin is decomposed into formaldehyde catalyzed by acidic atmosphere. This decomposition reaction occurs rapidly above 110 C. It is a direct gas-solid transformation, which is conducive to controlling the deformation of green billet and ensuring the dimensional accuracy after sintering.



Catalytic degreasing happens at the interface between atmosphere and binder. There is no gas in the forming blank. The advancing speed of the reaction interface can reach 1-4 mm/h. CREMER Germany has designed a continuous degreasing and system for Catamold degreasing process. The process of operation is to place MIM forming in the first heating zone of degreasing and heat it to 86 C in nitrogen atmosphere to avoid condensation of nitric acid on the billet in subsequent catalytic degreasing process. Then the forming blank was moved into the catalytic degreasing zone, and the polyformaldehyde resin was decomposed into formaldehyde. After preliminary degreasing, the billet enters the sintering furnace through the first cleaning chamber, and the residual binder is removed in the first heating zone of the sintering furnace. Subsequently, sintering is carried out under the action of nitrogen, hydrogen, argon, decomposition of ammonia and other mixtures. An important feature of Catamold method is that catalyst degreasing can avoid liquid phase when degreasing, which avoids the weakness of MIM products that are prone to deformation and difficult to control size accuracy. It is a major breakthrough in MIM industry. Because of catalytic degreasing, degreasing time is greatly shortened and cost is reduced. The application of metamold method can produce large size [MIM parts](#).

The continuous degreasing and sintering system of CREMER can realize continuous production, making MIM a competitive near net forming technology for PM.

Metamold method is the most advanced MIM degreasing method applied in industrial production. However, it has some problems, such as the acid atmosphere corrode the equipment, waste gas treatment, and the cost of equipment investment is higher than other methods.

An important feature of the Catamold® method is the use of catalyst degreasing, degreasing does not appear in the liquid phase, to avoid the MIM products are prone to deformation and the weakness of the difficulty of controlling the dimensional accuracy of MIM products, is a major breakthrough in the MIM industry, and because of the catalytic degreasing, greatly shorten the degreasing time, thereby reducing costs, and the production of larger size of the MIM parts.

[Harber Metal](#) Ltd. is a powder metallurgy manufacturing company created since 2014, with good production facilities and advanced technology, and is now into the production of iron-based powder metallurgy and stainless steel powder metallurgy. The company covers an area of 5,000 square meters, with 1,600 square meters of workshop, and dozens of sets of automatic presses from 100 tons to 5 tons for powder metallurgy. There are dozens of sets of automatic presses for powder metallurgy ranging from 100 tons to 5 tons, as well as complete product testing equipment and matching powder metallurgy mold processing equipment. Now the company has an annual output of 500 tons, about 5 million pieces of powder metallurgy products. products per year.

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