

3D Printing Series - Resin -

Photosensitive Resin

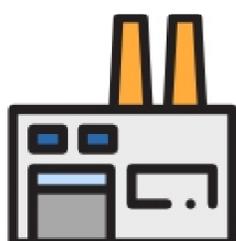
3D printing materials can be roughly divided into plastics, resins, metals, ceramics, and other powder materials. This article takes resin as the main axis, namely photosensitive resin.

Photosensitive resin are mainly acrylic epoxy resins. The main components include macromolecular monomers, oligomers, photoinitiator, and additives, etc., and are gradually cured under light according to molding technology. More worth mentioning is the **low curing energy requirement**, the amount of **volatile liquids is also extremely small**.

With the above advantages of speed and environmental protection, the application fields are also extensive, from **industrial fine parts, precision casting molds and even medical human body parts, adhesives, sealants, protective coatings, models**, and so on.



Density & Quality



The photosensitive resin material properties are **brittle and easy to deform**, especially when it is cured (that is, gradually cured the liquid polymer).

The acrylic resin will shrink by 5-20% Deformation rate;
The epoxy resin has a shrinkage deformation rate ranging from 1 to 2%.

POINT:

The larger the shrinkage deformation rate, the product will warp, crack, and even will peel off between layers, which is the biggest cause of unstable quality.

To improve photosensitive resin products, the manufacturers will add binders, oligomers, photoinitiators, and other additives to change the **light absorption wave**, thereby **stabilizing** the shrinkage rate, and even accelerating and strengthening the cured product.

Know your products density from raw material

Track shrinkage, elastic modulus, wear resistance, hardness and brittleness.

Gain a deeper understanding of the density **before & after curing** and the **mixing ratio** of raw materials, and specifically adjust the physical and chemical properties of materials such as **fluidity, curing molding wave range, printed product strength, and toughness** to consolidate stable and excellent quality.



What MatsuHaku Do:



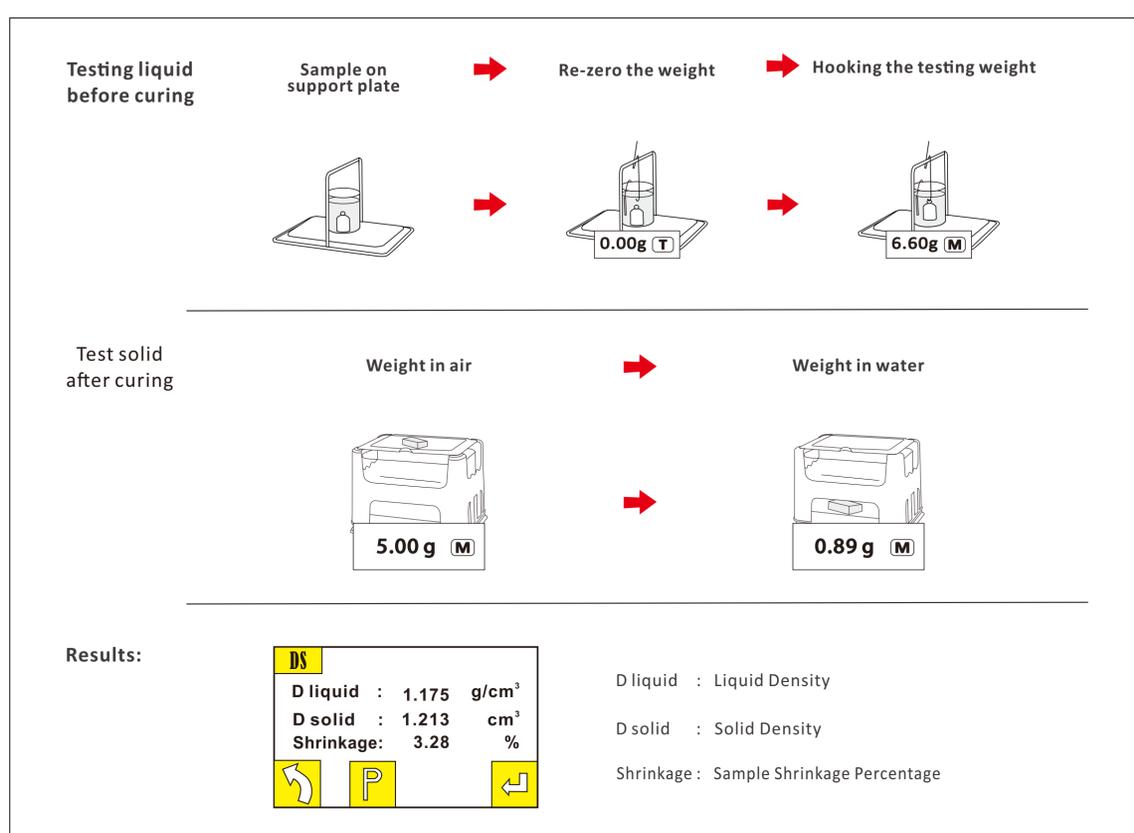
Based on the density of 3D printing materials, MatsuHaku has specially introduced a model specifically for testing the relative density and shrinkage of photosensitive resin.

By the liquid and solid programs are configured in the machine, you can test the **raw materials and final product data before and after the light-solid program**, and directly calculate the following data: **Liquid density, solid density and shrinkage rate**.

Generally speaking,

If you want to **confirm the quality**, the very important point is to **know the density of it**.

MatsuHaku 3D printing product density tester quickly detect the sample to **control and reduce deformation, warpage and cracking** of the parts caused by shrinkage.



MatsuHaku Density Tester Keep You Aware Of

1. **Reduce** the cost and the **Defect** loss
2. Fit the international **Standard**
3. Make sure the quality **Stable**



**With MatsuHaku Density Tester
Quality control is more easier than you thought**