



High quality filament for 3D printer made in Japan  
We have developed Shape Memory Polymer filament for 3D printer with all Japanese raw materials.  
Please experience Japan quality.  
It can be used for FDM method open reel 3D printer.



# SMP(Shape Memory Polymer) Filament

Heat after printing and can be customize shape

## Advantages of SMP Filament:

It is the first time to develop filament of SMP (Shape Memory Polymer) in the world which is paid attention in the field of such as space industry and advanced medical care.

SMP filament soften when it heats after printing and it can be customize shape.

For example, when SMP Filament is used for medical appliance touching the skin, it is possible to customize a printing product and adjust for each person.

There are infinite possibilities of application.

## Characteristics of SMP:

1. Temperature Dependency of elastic modules

The elastic modulus changes largely at the temperature below(hard state) and above (soft state) the glass transition temperature ( $T_g$ ).

2. Shape recovery and fixity

To heat SMP with no external force from a low temperature to a temperature higher than  $T_g$ . It eliminates the strain, resulting in recovery of its original shape. SMP allows the maximum strain can be applied up to 400%.



joint development

**F** Filament KO-BO  
by **KYORAKU Co.,Ltd.**