

## Raise3D Premium PVA+ Technical Data Sheet

Raise3D Premium PVA+ is a polyvinyl alcohol (PVA) based cold water soluble support filament for dual extruder FFF 3D printing. The material has enhanced thermal stability, and compatible with generic materials including PLA, PETG, PA (Nylon), etc. This filament is nontoxic, and biodegradable once dissolved in water.

### Material features:

- Optimized formulation with enhanced printability and thermal stability;
- Excellent solubility in cold water;
- Proper adhesion with PLA, PETG and Nylon;
- Ease of removal with smooth support interface;
- Waste can be disposed through household effluent (\*);

(\*) This material is not 100% biodegradable but can be disposed of through the household drain with an excess of water.

### Filament specification

| Size   | Ø tolerance | Roundness |
|--------|-------------|-----------|
| 1.75mm | ±0.05mm     | ≥ 95%     |

| Material   | Compatibility |
|------------|---------------|
| PLA        | ++            |
| PETG       | ++            |
| ABS, ASA   | +             |
| PC         | -             |
| PP         | --            |
| TPU        | +             |
| PA & PA CF | ++            |

++ Excellent compatibility as support material for all geometries

+ Good compatibility as support material for most geometries

- Poor support for most geometries

-- Poor support for all geometries



## Material properties

| Specification               | Testing method            | Typical value          |
|-----------------------------|---------------------------|------------------------|
| Specific gravity            | ISO 1183                  | 1.22 g/cm <sup>3</sup> |
| MFR                         | ISO 1133 (220°C, 2.16 kg) | 2.3 g/10 min           |
| Young's modulus             | ISO 527                   | 3500 MPa               |
| Charpy Impact Strength 23°C | ISO 179                   | 1.7 kJ/m <sup>2</sup>  |
| Printing temp.              | Raise3D specific          | 215±10 °C              |
| Melting temp.               | Raise3D specific          | 163 °C                 |
| Vicat softening temp.       | ISO 306                   | 60 °C                  |

### Packaging & Storage:

Raise3D Premium PVA+ is delivered in sealed and vacuumed bag. The material should be stored in cool (15-25°C), dry environment, and avoid direct sunlight. Once unpacked, please ensure the material is properly dried before print, in order to avoid any printing issue.

### Recommended Operation Conditions

Recommended part bed temperature: >60°C. The printing temperature should not exceed 225°C for over 5 min. Raise3D Premium PVA+ works with most of the common part bed adhesives. The dissolution rate of Raise3D Premium PVA+ in water is dependent on the volume of the printed object, the amount and temperature of water. Using higher water temperature (up to 70°C) will accelerate the dissolution process. However, to prevent the part deformation during dissolution process, the water temperature should not exceed the softening temperature of main material used, especially for PLA (water temperature lower than 60 °C).

### Disclaimer

The typical values presented in this data sheet are intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly with printing conditions. End- use performance of printed parts depends not only on materials, but also on part design, environmental conditions, printing conditions, etc. Product specifications are subject to change without notice.

Each user is responsible for determining the safety, lawfulness, technical suitability, and disposal/recycling practices of Raise3D materials for the intended application. Raise3D makes no warranty of any kind, unless announced separately, to the fitness for any use or application. Raise3D shall not be made liable for any damage, injury or loss induced from the use of Raise3D materials in any application.

