



# RADIO FREQUENCY MATERIALS

Maximize your radio frequency (RF) performance with PREPERM™ materials

## OPTIMAL RF PROPERTIES

- Well-controlled dielectric constant range 2.55–23
- Ultra-low loss even at mmWave frequencies
- Stable performance even up to 220 GHz

## SPEED UP YOUR CONCEPT VALIDATION WITH

- Avient Design services
- Filaments for 3D printing

## FROM PROTOTYPING TO MASS PRODUCTION

- Injection molding process enables flexible product designs
- Scalable production
- Customized sheets in high volumes
- Consistent quality in mass production
- Excellent total cost performance compared to traditional materials

## PREPERM™ IS A SUSTAINABLE CHOICE

Products' life-cycle and environmental footprint are important factors for designers. PREPERM helps to design more sustainable products. Now the benefits of thermoplastic materials are available also for the applications traditionally produced from ceramics or thermoset plastic materials.

- Part weight reduction
- Low loss tangent
- RoHS & REACH compliant solution
- Halogen- and heavy metal-free solution
- Recyclable

## NEW TECHNOLOGIES REQUIRE NEW MATERIALS

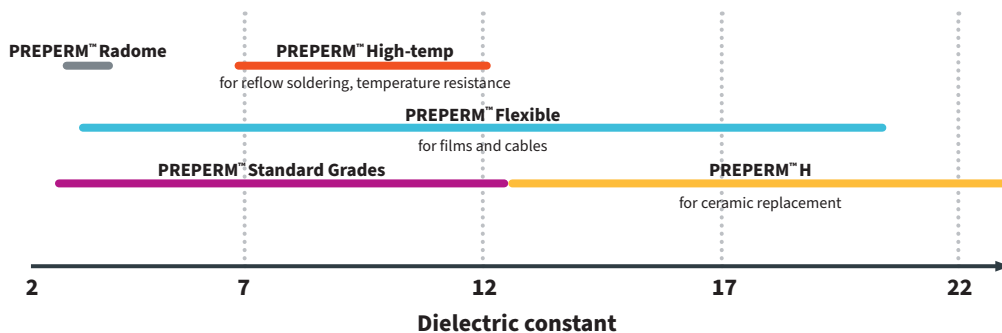
The rapid technology development requires new frequency ranges and bandwidths. This is a challenge for material performance.

Avient’s ultra-low loss PREPERM materials provide solutions for tomorrow’s mmWave frequency demands. Isotropic and consistent PREPERM materials are designed for many RF designs such as antennas, radomes, resonators or filters. PREPERM technology enables a high degree of customization based on individual customer needs. The dielectric material properties will be tailored to fit perfectly on the design in hand.

## CREATING A SAFE AND ULTRA-CONNECTED SOCIETY WITH FUNCTIONAL PLASTICS

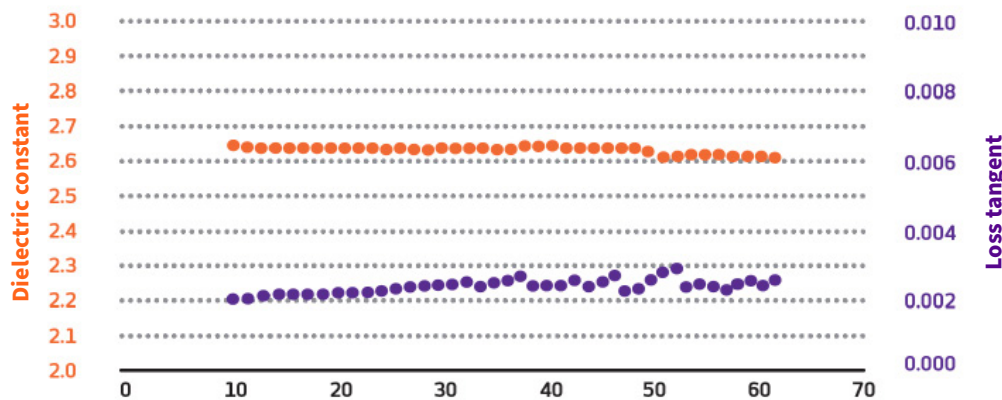
That’s our purpose—plain and simple. Our ultra-low loss PREPERM materials are used for example in automotive radars to gain the extra second that can save lives. And when it comes to ultra-connected society, we are happy to be involved in countless game-changers related to 5G and autonomous driving.

We ride the waves of tech innovations and constantly aim higher. We eagerly look for new challenges and solve them together with our customers. This is how we create materials that matter.



Our PREPERM portfolio includes a wide range of materials to match the requirements of your application.

### ILLUSTRATION OF STABLE DIELECTRIC PROPERTIES AS A FUNCTION OF FREQUENCY



Measurements for PREPERM L260 grade dielectric properties performed at VTT Technical Research Centre of Finland Ltd and they reflect the typical dielectric properties of PREPERM range.

The advantages of PREPERM materials relate to more efficient data transfer (antennas, mobile base stations, satellite communication), better sensitivity (GPS, radars, radomes) and longer battery life (mobile and IoT devices).

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