

## Product information

# TECASINT Polyimides High performance plastics for the semiconductor industry

### TECASINT – high temperature resistant and dimensional stable polyimides with defined electrical properties

Ensinger TECASINT sees a broad range of applications in the semicon industry due to its superior mechanical strength beyond 300 °C and high purity whilst operating well in a plasma environment.

Predominantly used in the back-end area of the process, TECASINT is specified in the manufacturing of high-quality electronic components. Polyimides from Ensinger are used throughout the whole production process from the wafer to the finished chip.

### Benefits using TECASINT

- Excellent dimensional stability
- Low thermal expansion
- High wear resistance
- Low outgassing, high purity
- Different ESD-grades available
- Plasma resistance
- Outstanding stiffness offers the possibility to create sophisticated parts with very thin wall sections
- Bigger lot sizes can be produced cost efficiently by direct forming technology

Therefore TECASINT is the first choice in the semicon industry for high performance plastics.

### Typical applications

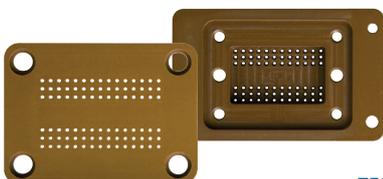
- Test sockets
- Conversion kits
- Handling of MEMS / IC's
- Chip testing
- Wafer handling
- Components for production equipment
- Plasma applications

### General TECASINT properties

- High strength between -270 °C to +300 °C
- Good machinability that allows production of parts with tight tolerances
- Excellent thermal, mechanical and electrical stability
- Low moisture absorption
- Good chemical resistance

### Ionic purity

| [ppm]          | TECASINT 2011 | TECASINT 4011 | TECASINT 4111 |
|----------------|---------------|---------------|---------------|
| Aluminum (Al)  | 1             | <1            | <1            |
| Calcium (Ca)   | 1             | <1            | <1            |
| Copper (Cu)    | <0.1          | <0.1          | <0.1          |
| Iron (Fe)      | 0.43          | 0.24          | 0.21          |
| Magnesium (Mg) | <2            | <2            | <2            |
| Sodium (Na)    | <3            | <3            | <3            |
| Zinc (Zn)      | <0.3          | <0.3          | <0.3          |



TECASINT 4011: Test sockets

## TECASINT 2011

Unfilled grade with a good balance between stiffness and ductility. Suitable for electrical and thermal insulation. Low outgassing and high purity.

## TECASINT 4011 / 4111

Unfilled grade with maximum strength. High elongation and toughness with great modulus. Superb heat aging resistance and low water absorption.

TECASINT 4111 provides an outstanding heat distortion temperature of 470 °C.

## TECASINT 5051

Glass fiber reinforced grade with low thermal expansion and great thermal robustness. Excellent wear resistance and good dimensional stability. Electrically insulating.

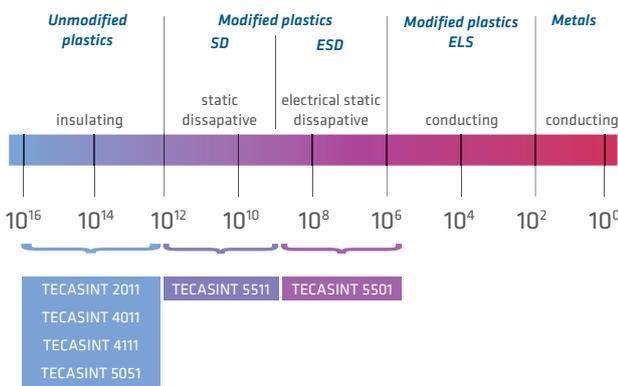
## TECASINT 5501 – ESD Type

Electrostatically dissipative polyimide grade with a surface resistance of  $10^6$  to  $10^8$  ohm. Low thermal expansion and good dimensional stability.

## TECASINT 5511 – SD Type

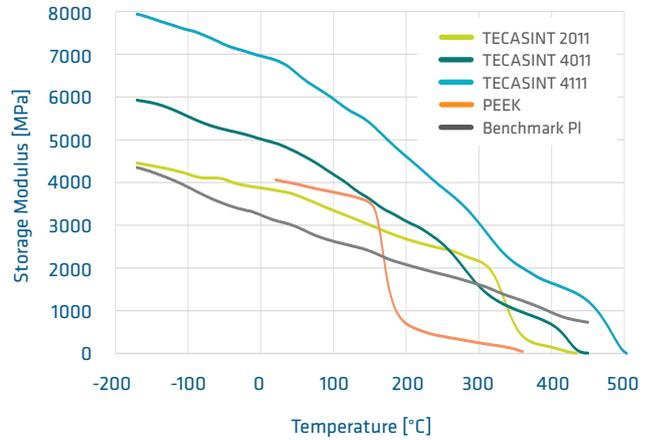
Static dissipative polyimide grade with a surface resistance of  $10^9$  to  $10^{11}$  ohm. Low thermal expansion and good dimensional stability.

## Surface resistivity [ $\Omega$ ]

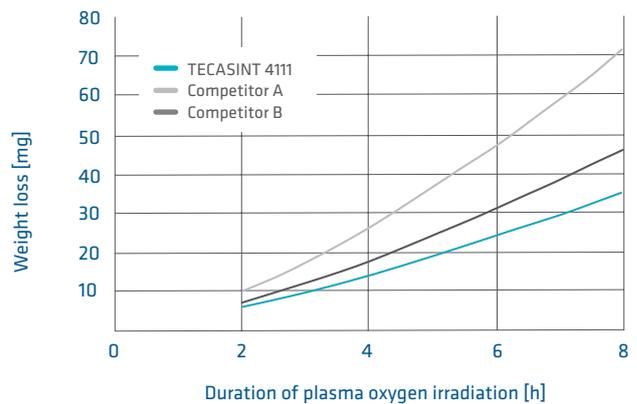
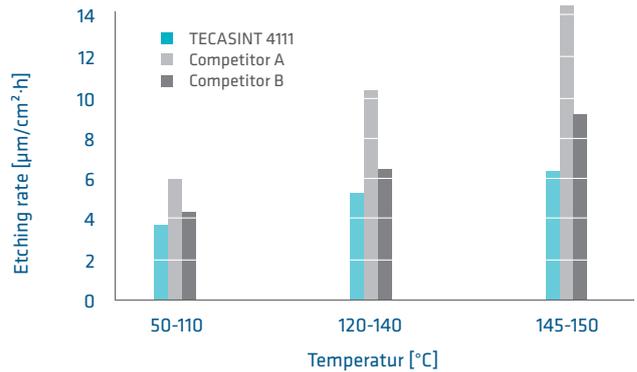


## Mechanical storage modulus TECASINT

### 3 point bending test, 1 Hz, 2K/min



## Plasma resistance TECASINT



## Contact

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