



Choose **Ducoya** for superior performance and innovation that exceeds expectations  
← explore our product range

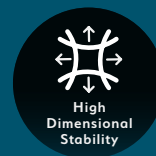
# Duvelco

## Specialist Polyimide Polymers

Solutions for Critical and Demanding Applications



High Purity



High Dimensional Stability



Thermal Stability



Bringing together high purity, plasma resistance and dimensional stability without outgassing even in an ultra-hard vacuum.

# DUCOYA<sup>®</sup>

## FOR TEST SOCKETS

# DUCOYA<sup>®</sup>

## Specialist Polyimide Polymers For Semiconductor Test Sockets

Test sockets are crucial components in the back-end operations of the semiconductor manufacturing industry. They are instrumental in testing and 'binning' (sorting) all types of Integrated Circuits (ICs). They facilitate the vital interface between the semiconductor device and testing equipment, allowing efficient testing. In some cases, they also enable a process known as 'burn-in', which stresses the ICs to identify potential failures before they occur in the field.

This High speed testing process identifies defects and performance issues, ensuring that chips meet their design and performance specifications, enhancing the overall productivity of the semiconductor manufacturing industry.

The excellent electrical properties of any test socket are crucial for producing consistent and predictable results. They ensure high resistive and appropriate dielectric properties over a wide range of frequencies, voltages, and temperatures without being excessively worn or degraded by the many repetitive motion cycles through which millions of ICs are tested and assessed.

The machining of Ducoya material to extremely tight tolerances made possible by remarkable dimension stability instil confidence in its performance. Ducoya boasts very low moisture absorption and low and consistent thermal expansion. Ducoya does not have phase transitions or exhibit a T<sub>g</sub> (glass transition), simplifying design and operation by improving predictability in semiconductor manufacturing.

As described above, dimensional stability over the expected humidity and temperature operating range is critical because sophisticated test sockets have extremely small feature sizes.

One of the key benefits of Ducoya material is its exceptional wear resistance, a critical feature in many Ducoya applications. With regard to test sockets, which can see between 100,000 and more than one million test cycle connections; wear resistance is critical. High wear resistance ensures dependable test results without misguided pins making inappropriate electrical connections, giving unreliable results. Ducoya's 'soft but strong' nature is particularly crucial in the context of test sockets. It is both conformal and robust, allowing it to guide the pins and establish a good electrical connection without causing damage, a crucial advantage in the industry.

Ducoya is an excellent electrical insulator with surface resistance values over  $10^{15}\Omega/\text{sq}$ . Ducoya also has a high dielectric strength and a low dielectric k value for high test frequencies over a wide temperature range. If your application needs electrostatic dissipative or electrically conductive values of resistance, please see Ducoya grades G201 ESD and/or G202 C respectively.



**G001 UP**

100% unfilled PMDA-ODA produced on a dedicated line, delivers ultra-purity for demanding applications where parts per billion levels of impurities are significant.



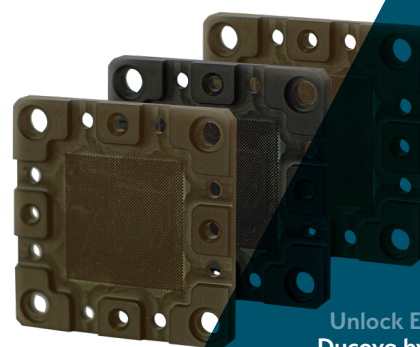
**G201 ESD**

High purity PMDA-ODA polymer combined with a proprietary filler to allow limited conductive capability allowing a gentle discharge of accumulated static electricity. For use where a discharge of static electricity is a significant process risk.



**G202 C**

High purity PMDA-ODA polyimide with a combination of proprietary fillers to allow electrical conductivity. Intended to prevent accumulation of static electricity where this is a significant process risk.



Unlock Excellence  
**Ducoya by Duvelco**  
Redefining standards in polyimide technology



Discover more about Ducoya

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To learn more about Ducoya's use in test sockets, please contact Duvelco at [info@duvelco.com](mailto:info@duvelco.com) or request a sample on our website, [www.duvelco.com](http://www.duvelco.com).

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