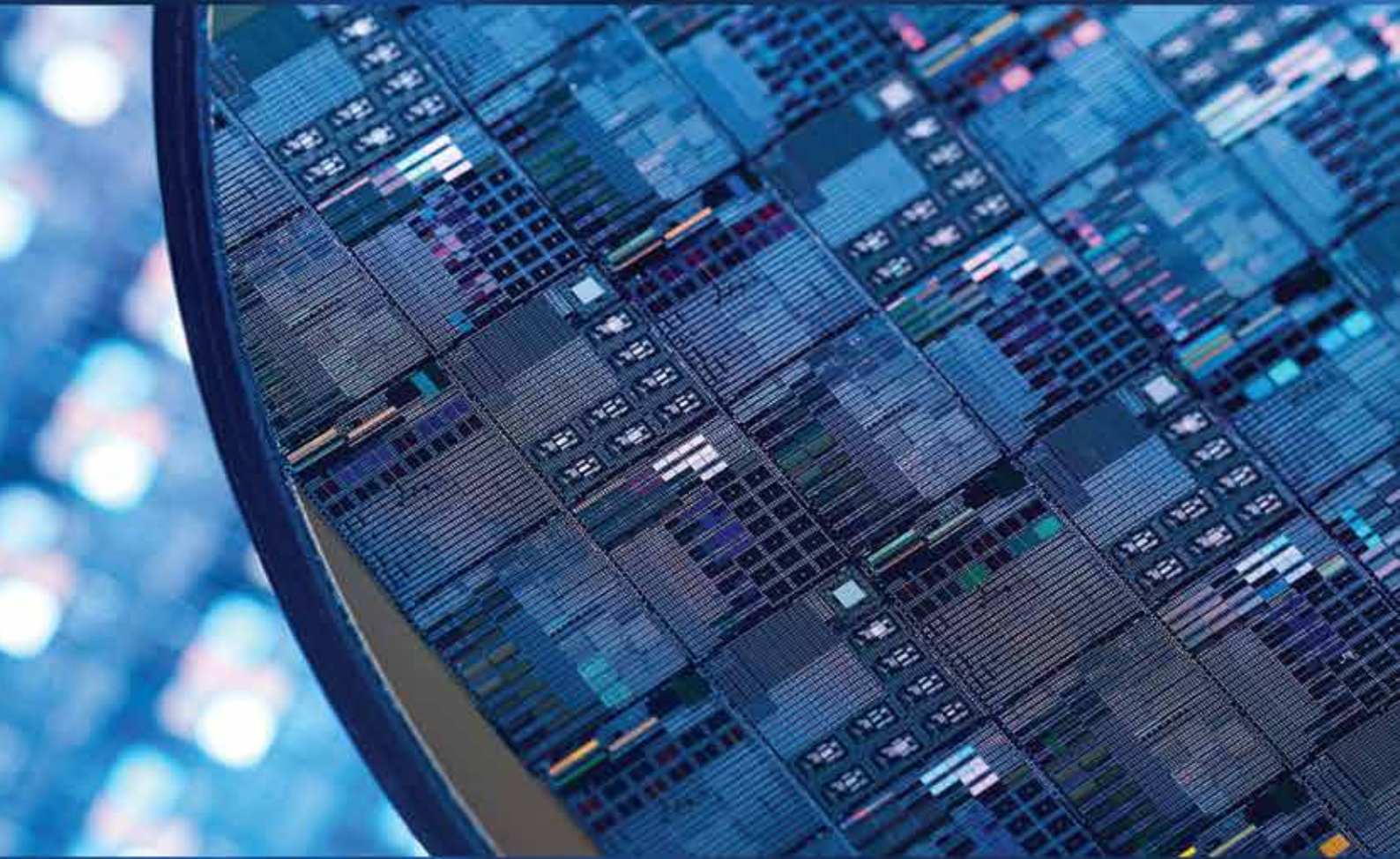




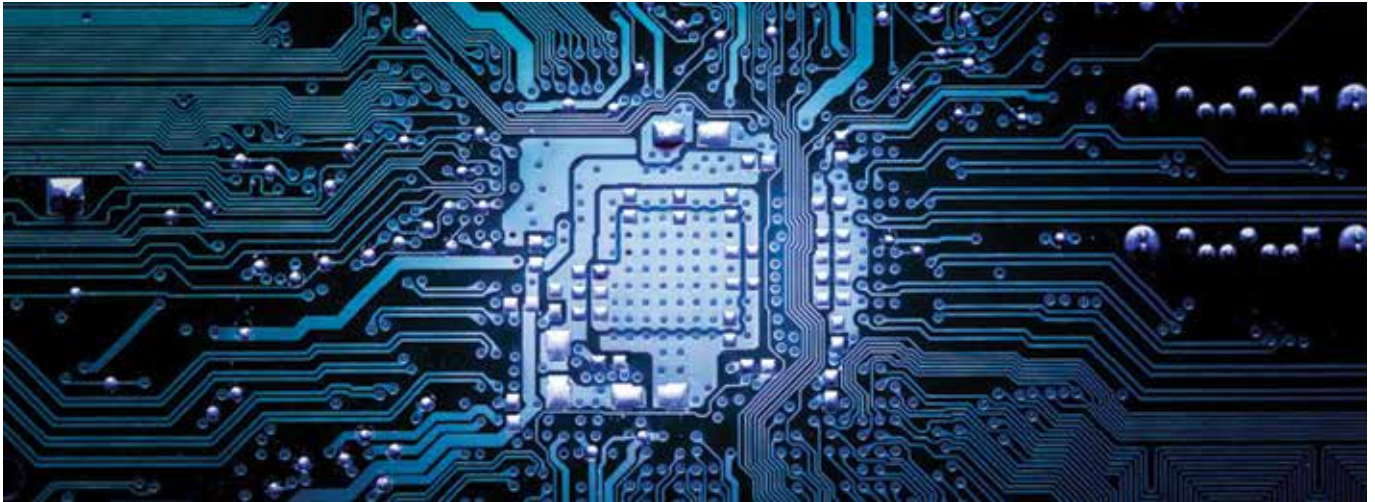
Semiconductor Backend Tools Catalog



2022



AT A GLANCE



Oricus Semicon Solutions is an innovative Semiconductor Tools manufacturing company who, with almost 100 years of collective expertise, craft high tech bespoke tooling solutions for the global Semiconductor Assembly and Test industry.

From one-off customised products to large scale production, our R&D strength, precision manufacturing experience and problem-solving capabilities are impeccable. With a passion for engineering and customer oriented service, we deliver price competitive precision Semiconductor Tooling solutions to a global market with a local presence.

Oricus is made up of a global network of professionals with strong commitment and passion for our work. The company is managed and operated with a spirit of professionalism based on the foundation of integrity, equality and respect. We are determined, objective with a sense of ownership to deliver on our goals. We value our values, professionalism, passion, perseverance and our relentless pursuit to deliver value for our customers.



Authenticity



Expertise



Professionalism



Perseverance



Passion



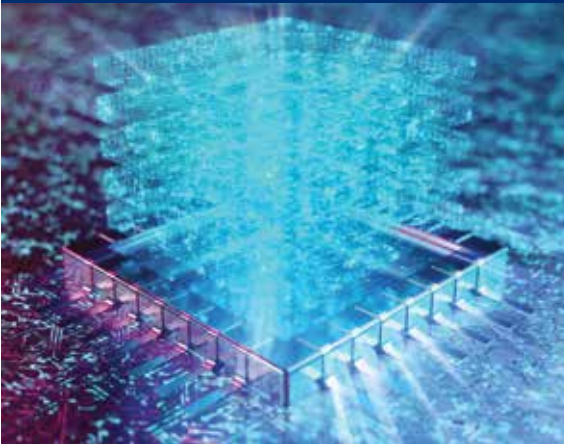
Community

Oriented to Customer's needs



We excel at creating specials – one of a kind pieces, with one of a kind craftsmanship combining with the latest in manufacturing technology to produce micro precision tooling. Oricus can Design and Manufacture either one-offs or high volume orders to your unique specifications, from High Temperature resistant tools for Power Devices to tools with complex geometries for 3D Advanced Packaging.

Industry Leading Solutions



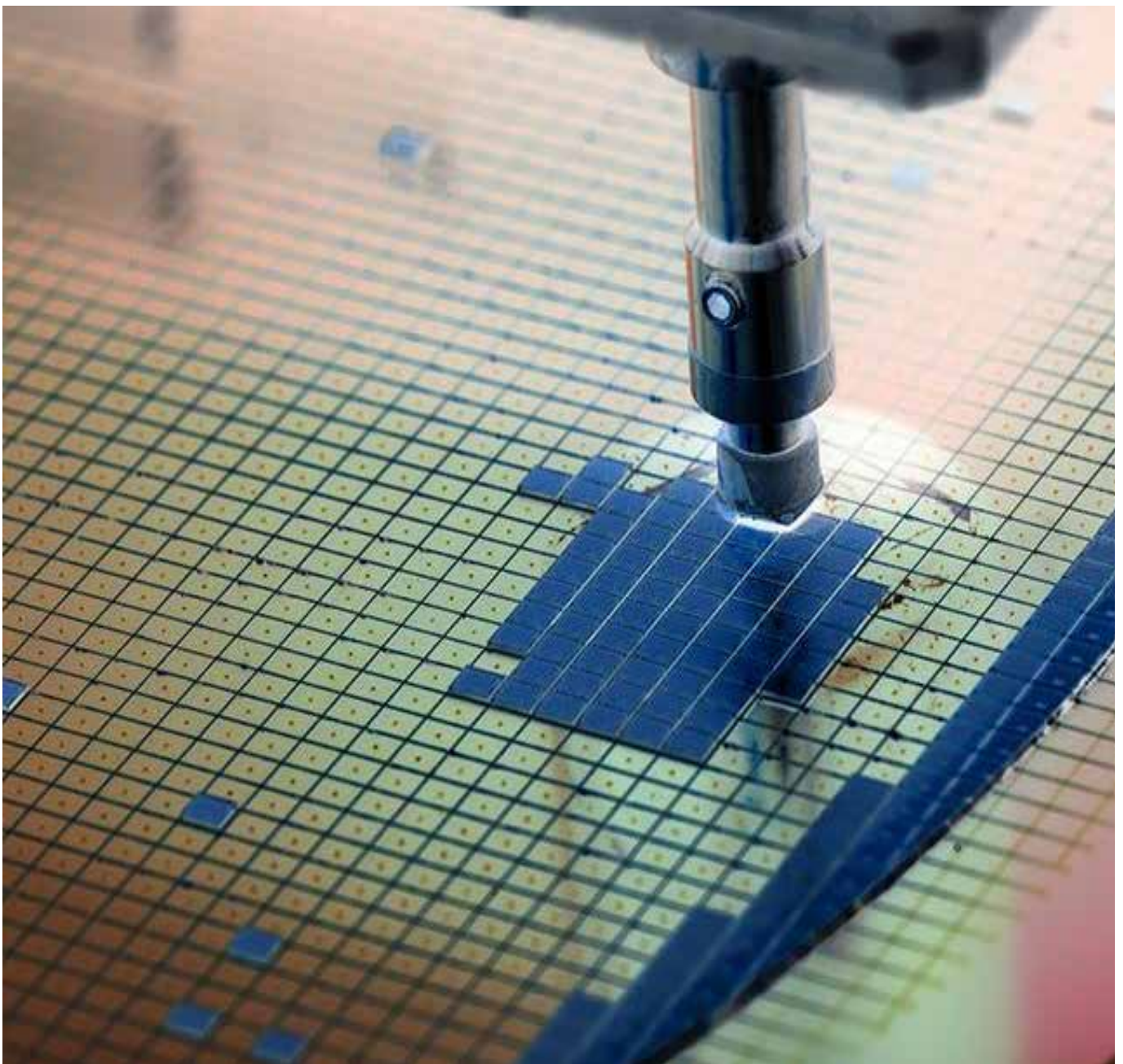
Our Technical Sales Consultants and R&D teams of seasoned Semiconductor Assembly and Test industry professionals will study your chip and package requirements and offer effective and competitive tooling solutions that will work right out of the box. Oricus has the solution to your tooling requirements. Leave it to us and you can focus on your key processes.

Research and Development

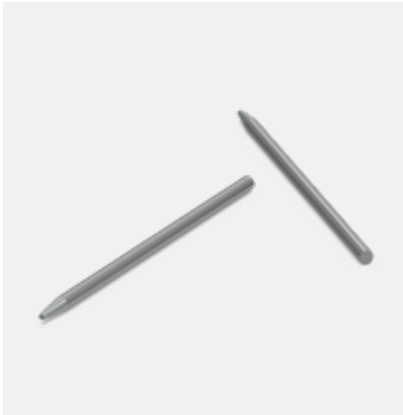


R&D is the cornerstone of our commitment to deliver market leading tooling solutions. Our Material Science know-how, coupled with our Manufacturing Expertise and knowledge on the latest demands of Integrated Circuits Packaging allow us to offer tools that maximizes productivity and minimizes downtime.

Die Attach



Ejection Systems



Standard Needles

Features tip designs in Flat Tip and Spherical Radius configurations. Used for Standard die ejection applications.



Twin Needles

Manufactured with Twin ejector tips of a common datum for optimal flatness during the die ejection process.



Quad Needles

Precision machined with a single datum for all 4 tips for Best-in-Class stability and performance of the ejection process.



Needle Holders

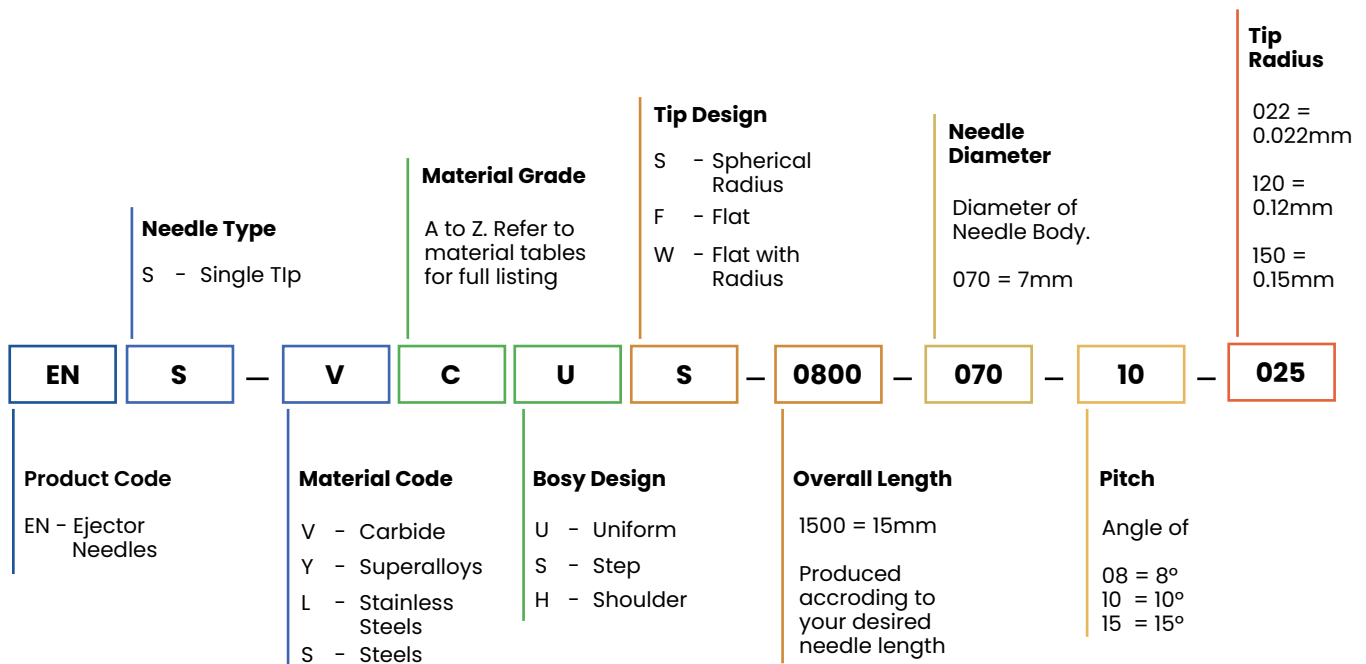
Needle Holder layout and positions designed based on your specific application requirements for optimal die ejection results.



Pepper Pots

Our Pepper Pots are designed with carefully considered layout and vacuum holes to ensure superior downwards vacuum suction force.

Part Numbers And Ordering



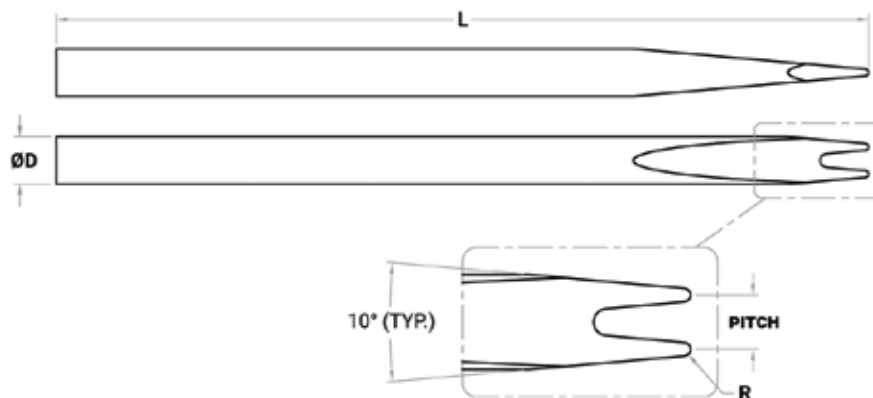
Twin Needles



Twin Needles are designed for small elongated die applications ($\leq 0.7\text{mm} \times 1.0\text{mm}$) to reduce the propensity of tilted dies during the ejection process. For elongated dies, single tip needles with one point of contact will create a pivot action and cause the die to see-saw when being ejected.

Our line of Twin Needles are designed and manufactured to the most stringent tolerances. Both twin ejector tips are controlled with a common datum for maximum flatness during the ejection process. Twin Needles come with 0.7mm diameter and will fit into most standard needle holders.

Oricus manufactures a wide range of Twin Needles to fit various die sizes. We can customize Twin Needles with additional features according to your die size, process or application requirements.



Features

- Better for small elongated dies compared to Single Needle or Quad Needles
- Comes in Cemented Carbide, HSS and Stainless Steel materials
- For Pierce-Through or small die applications, special sub-micron grade Cemented Carbide materials are available
- Needle Pitch-to-Pitch, radius and diameter are fully customizable according to your requirements

Benefits

- Twin Needle's 2 point contact with even distribution of force during ejection for elongated dies offers better balance as compared to Quad Needles
- One-time set up of Twin Needles eliminates needle offset issues with multiple single tip needles
- Multiple Twin Needles can be implemented for larger elongated dies to reduce contact pressure per ejection point while improving overall ejection stability

Part Number	L (mm)	ØD (mm)	PITCH	R (mm)
ENT-VCUS-1200-070-32-015	12.00	0.70	0.32	0.015
ENT-VCUS-1200-070-32-025	12.00	0.70	0.32	0.025
ENT-VCUS-1200-070-32-050	12.00	0.70	0.32	0.050
ENT-VCUS-1200-070-46-015	12.00	0.70	0.46	0.015
ENT-VCUS-1200-070-46-025	12.00	0.70	0.46	0.025
ENT-VCUS-1200-070-46-050	12.00	0.70	0.46	0.050
ENT-VCUS-1200-070-46-100	12.00	0.70	0.46	0.100
ENT-VCUS-1700-070-32-015	17.00	0.70	0.32	0.015
ENT-VCUS-1700-070-32-025	17.00	0.70	0.32	0.025
ENT-VCUS-1700-070-32-050	17.00	0.70	0.32	0.050
ENT-VCUS-1700-070-46-015	17.00	0.70	0.46	0.015
ENT-VCUS-1700-070-46-025	17.00	0.70	0.46	0.025
ENT-VCUS-1700-070-46-050	17.00	0.70	0.46	0.050
ENT-VCUS-1700-070-46-100	17.00	0.70	0.46	0.100
ENT-VCUS-1900-070-32-015	19.00	0.70	0.32	0.015
ENT-VCUS-1900-070-32-025	19.00	0.70	0.32	0.025
ENT-VCUS-1900-070-32-050	19.00	0.70	0.32	0.050
ENT-VCUS-1900-070-46-015	19.00	0.70	0.46	0.015
ENT-VCUS-1900-070-46-025	19.00	0.70	0.46	0.025
ENT-VCUS-1900-070-46-050	19.00	0.70	0.46	0.050
ENT-VCUS-1900-070-46-100	19.00	0.70	0.46	0.100

ESD Properties

Conductive < 10⁵ Ω

Applications

Standard Die Attach
Flip Chip
2.5D/3D
Wafer Level Packaging
Panel Level Packaging
System in a Package

Needle Material

Carbide
Superalloys
Stainless Steel

Needle Profiles

Spherical Radius
Flat Tip
Flat with Radius
Long Neck

Body Profiles

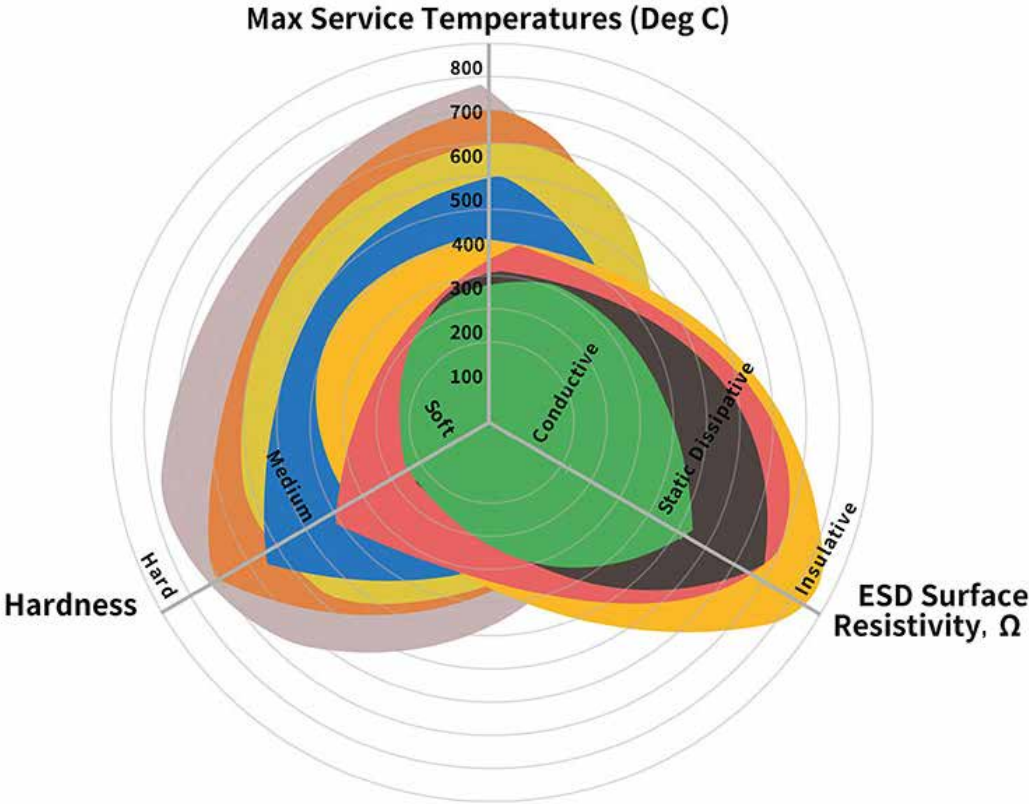
Standard
Step
Shoulder



MATERIALS

Oricus's extensive line of engineered materials specially developed and selected to offer optimal tooling performance for your specific Semiconductor Backend process. Our in-house materials are closely developed in partnership with Original Equipment Manufacturers with input from our customers. For externally procured materials, each material goes through a rigorous Quality Assurance and Performance Assessment programme before making it into our material list.

Oricus' in depth understanding and experience of materials allows us to formulate tooling solutions that work for you. As part of our value proposition, we study the conditions of your application and suggest the most appropriate material that meets your needs.



- | | |
|--|--|
| Tungsten Carbide <i>WC Line</i> | Non Ferrous Metals <i>NF Line</i> |
| Superalloy <i>SA Line</i> | Performance Engineering Plastics <i>SP Line</i> |
| Stainless Steel <i>SS Line</i> | Engineering Plastics <i>EP Line</i> |
| Tool Steel <i>TS Line</i> | Rubber <i>R Line</i> |

<p>WC LINE</p> <p>Tungsten Carbide</p> <p>High Wear & High Temp Resistance</p> <ul style="list-style-type: none"> Carbide, K15 Carbide, K30 Carbide, M30 Carbide K40 Carbide, MG30 	<p>SA LINE</p> <p>Superalloy</p> <p>All-Round Superior Performance</p> <ul style="list-style-type: none"> Haynes 25 (L605) Inconel Alloy 625 Inconel Alloy 718 Incoloy Alloy 925 Nitronic 50 Nitronic 60 Titanium Grade 2 Stellite 6 Stellite 31 	<p>SS LINE</p> <p>Stainless Steel</p> <p>Balanced Properties</p> <ul style="list-style-type: none"> 15-5 PH 17-4PH SUS 430F SUS 420 SUS 440C SUS 316 SUS 301 SUS 304 SUS 303 	<p>TS LINE</p> <p>Tool Steel</p> <p>High Strength</p> <ul style="list-style-type: none"> CPM-10V SKD 11 SKH 51 Mirrax 40 ASP 23 Stavax XW 10 XW 42 Assab 718 - HH HSS DF2 DF3 Ramax HH Rochling 2315
<p>NF LINE</p> <p>Non Ferrous Metals</p> <p>Special Applications</p> <ul style="list-style-type: none"> Aluminium 7075 Aluminium 6061 Copper Brass Hovadur K350 	<p>SP LINE</p> <p>Performance Engineering Plastics</p> <p>Advantageous Performance & Value</p> <ul style="list-style-type: none"> Torlon 4432 (PAI) Torlon 4301 (PAI) Torlon 5030 (PAI) Torion 7130 (PAI) Vespel SCP5050 (P) Vespel SP 21 (PD) Vespel SP1 (PI) ESD Semitron 520 ESD Semitron 420 ESD Semitron 410C ESD Semitron 225 	<p>EP LINE</p> <p>Engineering Plastics</p> <p>Economical And Versatile</p> <ul style="list-style-type: none"> Acrylic/ Polycarbonate TECAFORM SD Delrin ESD Delrin White Delrin Black POM PEEK PEEK HT PEEK GF 30% PEEK CF 30% 	<p>R LINE</p> <p>Rubber</p> <p>Geometric Flexibility ESD Protection</p> <ul style="list-style-type: none"> NBR NBR (Soft) NBR (Hard) NBR (Coated) HPR HPR (Soft) HPR (Hard) UPR CR (ESD) CR

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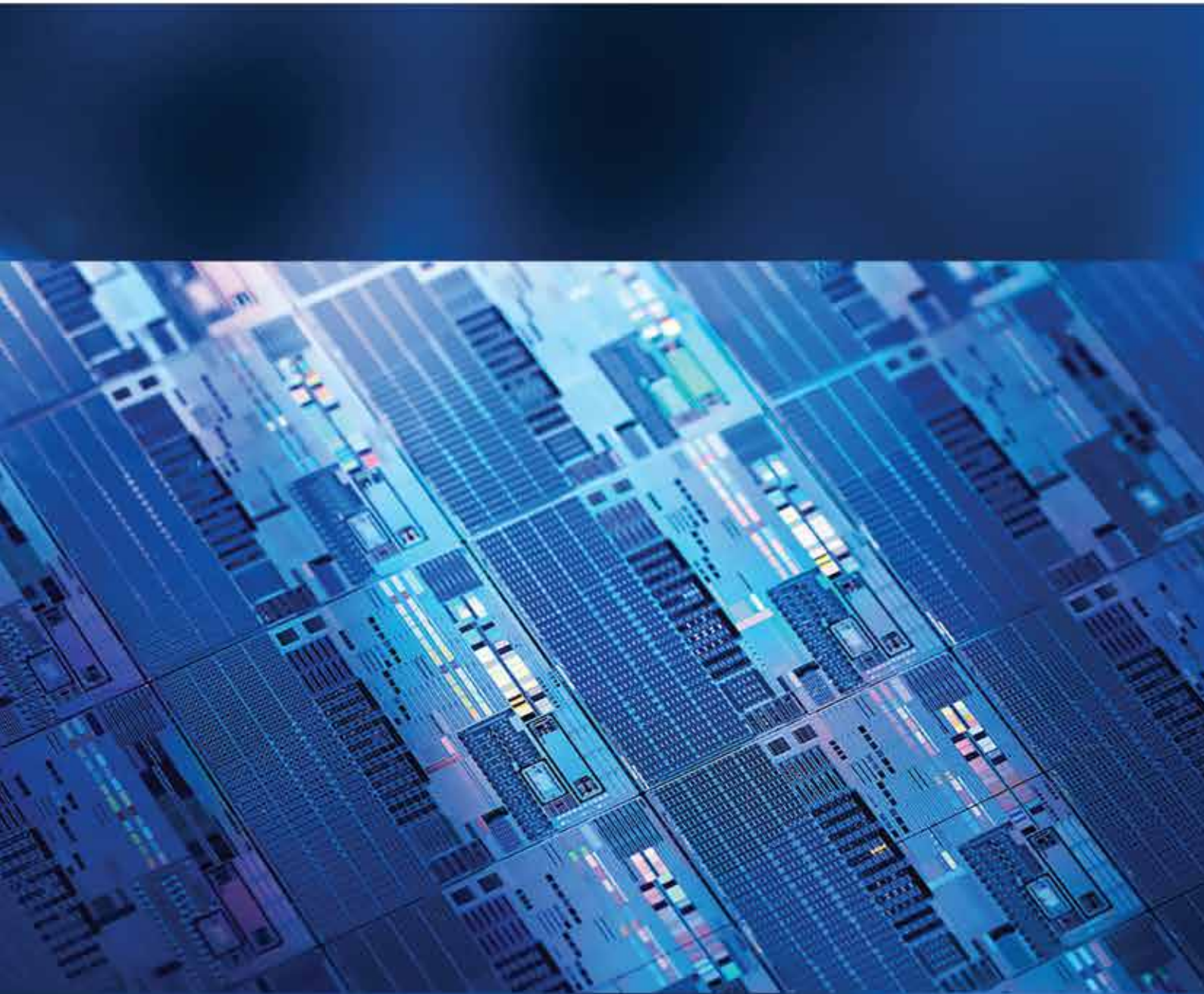
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