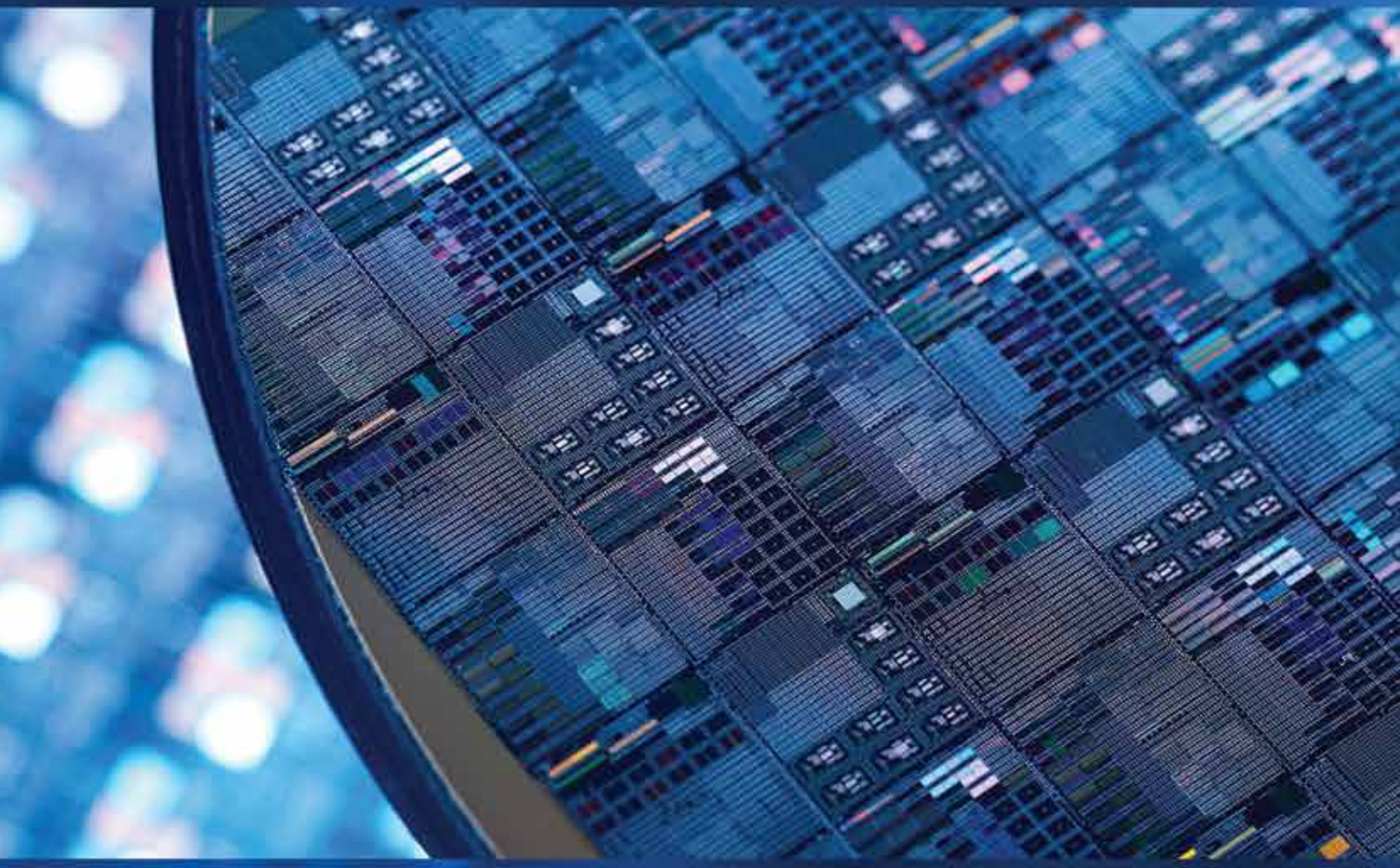
RICUS
SEMICON SOLUTIONS

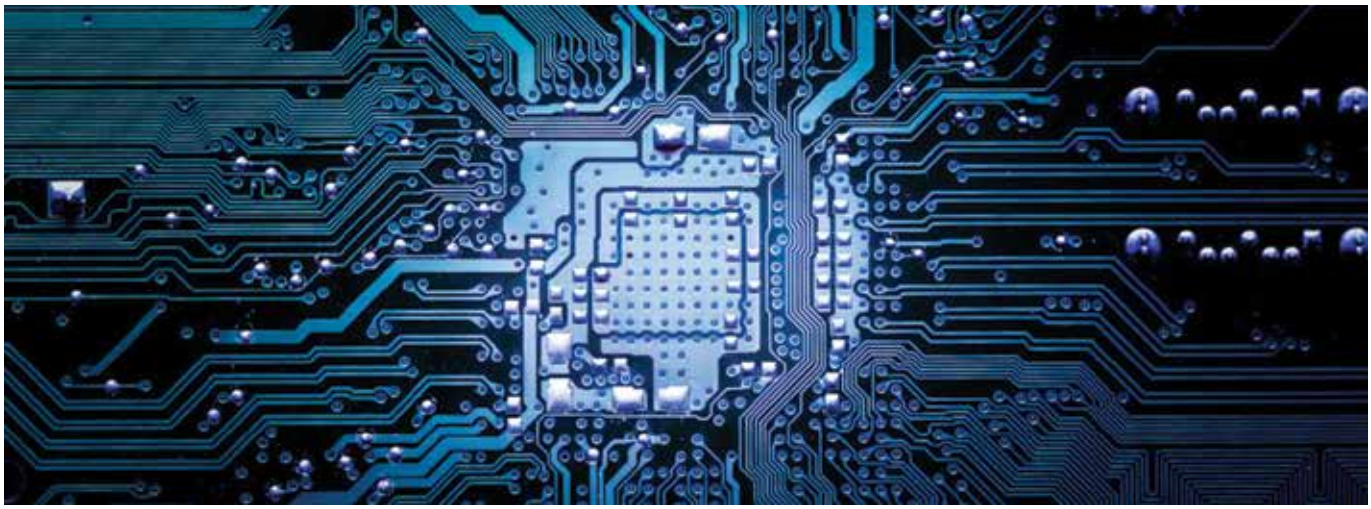
Semiconductor Backend Tools Catalog



2022

ORICUS
SEMICON SOLUTIONS

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.

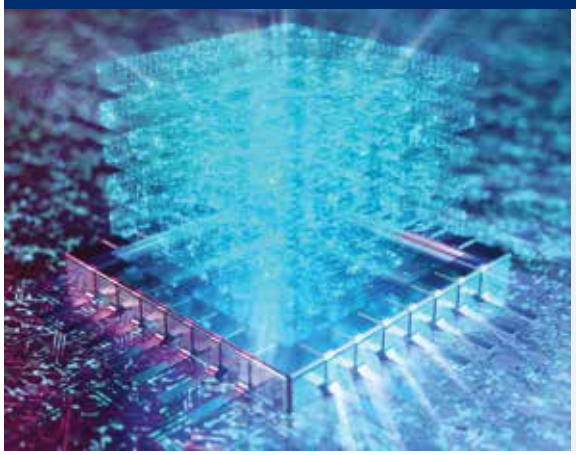
Oricus is a made up of a global network of professionals with strong commitment and passion for our work. The company is managed and operated with a spirit of professionalism based on the foundation of integrity, equality and respect. We are determined, objective with a sense of ownership to deliver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

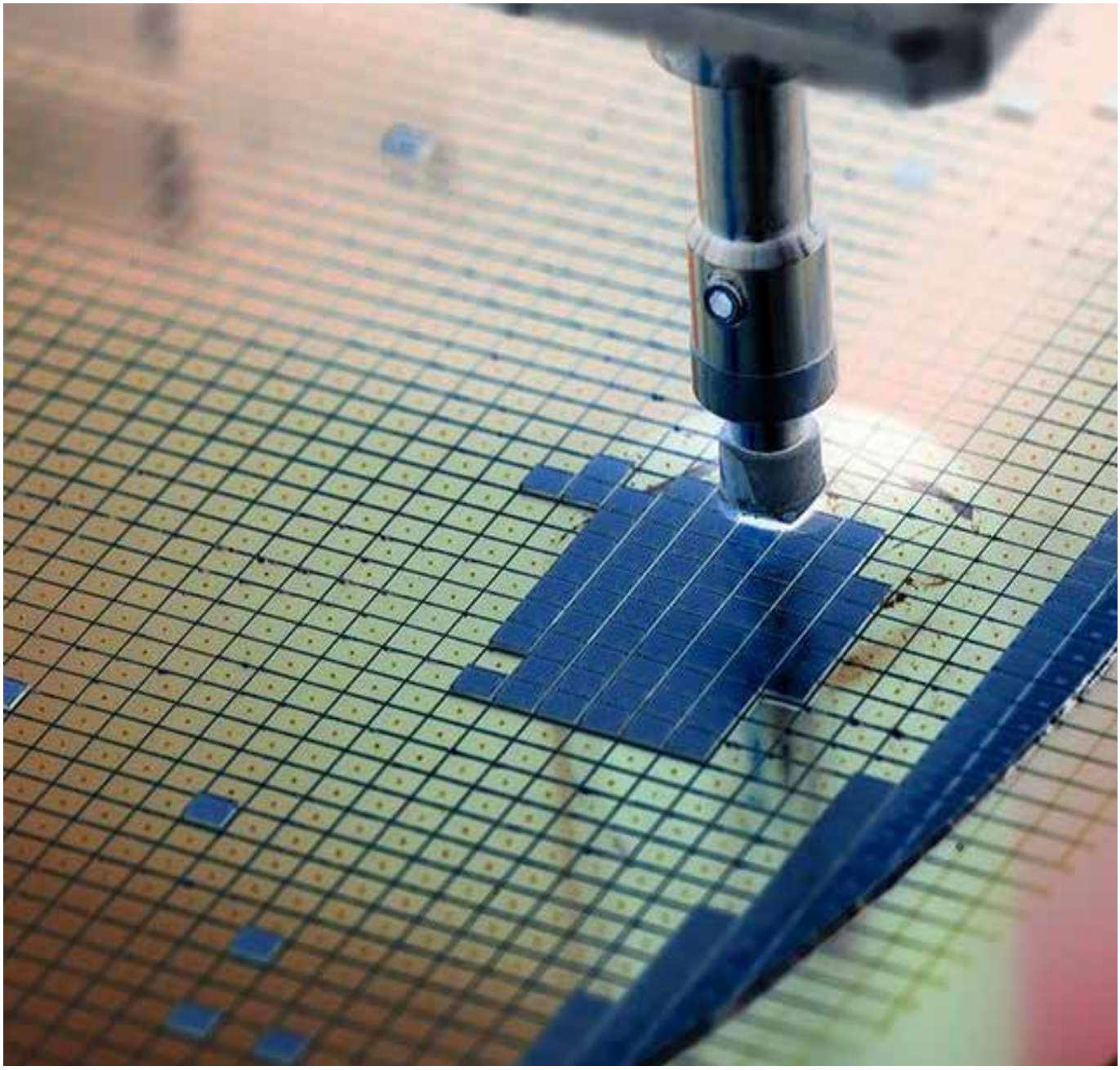


Our Technical Sales Consultants and R&D teams of seasoned Semiconductor Assembly and Test industry professionals will study your chip and package requirements and offer effective and competitive tooling solutions that will work right out of the box. Oricus has the solution to your tooling requirements.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



Pick-Up Tools

Engineering Plastics Tools

Polymeric tips made from POM, PI, PAI and PEI compounds. Economical, replaceable and lightweight, with mid resistance to temperature and wear.

Non Ferrous Tools

Non-Ferrous tools provide excellent thermal transfer and even heat distribution across the tip area with optimized levels of hardness and toughness.

Alloy / Special Alloy Tools

Tools made from Superalloys, Stainless Steel and Tool Steels. For applications that require high resistance of bond force, temperature and wear.

Hybrid Tools

Hybrids offer the performance of Tungsten Carbide while delivering the cost effectiveness of Alloy Tools. Delivers superior Cost to Performance advantages.

Carbide Tools

Toughest tools in our product lineup for the most demanding applications with the highest requirements of strength, temperature and wear resistance.

Part Numbers And Ordering

Material Code

- W - Hybrid Carbide
- V - Full Carbide
- Y - Superalloys
- L - Stainless Steels
- S - Steels
- F - Non-Ferrous
- E - Engineering Plastics
- P - Performance Engineering Plastics

Design Code

- F - Flat
- R - Relief
- G - Groove
- M - Multi-Hole
- C - Side Contact

Machine Make

- AP - Alphasem
- AS - ASM
- CA - Canon Bestem
- DA - Datacon
- EE - ESEC
- EM - EMTEC
- HA - Hitachi
- MR - MRSI
- PA - Palomar
- SR - Shibaura
- SW - Shinkawa
- UD - Universal Design

Tip Length or Tip OD Code

For lengths: 4 digit code 1590 = 15.9mm

For OD: 4 digit code 0800 = 8mm

Design Version

1 to 99

PR	—	E	B	F	T	—	UD	01	—	0300	0015	—	1

Product Code

PS - Pick Up Tool with Square and Rectangular Profiles

PR - Pick Up Tool with Round Profiles

Material Grade

A to Z - Refer to material tables for full listing

Feature Code

Multiple codes depending on specific features

Machine Model

01 to 99. According to different machine models

Tip Width code or Tip ID Code

For widths: 4 digit code 0518 = 5.18mm

For ID: 4 digit code 0600 = 6mm

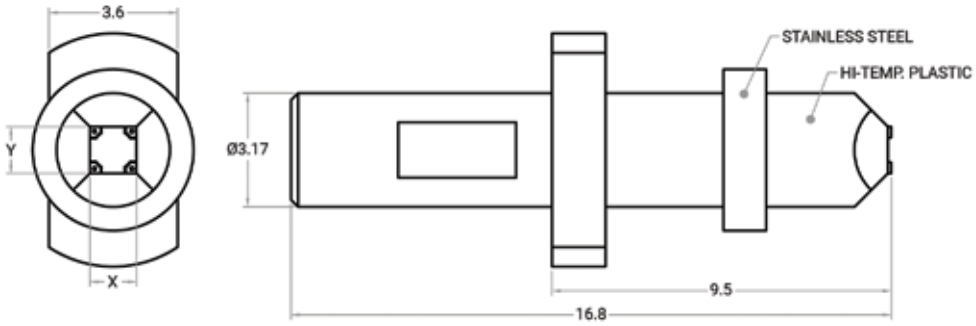
Engineering Plastics Tools

Matrix Design

Engineering Plastics Matrix Tip is the superior solution for thin die applications with die thickness ≤0.1mm. Tips used for Thin die applications requires stable vacuum force while maximizing tip to die surface contact area.

The design of our Matrix Tips features multiple vacuum holes drilled on the surface of the tip, in a distributed matrix layout. This design greatly enhances surface contact and stable suction force coverage throughout the surface of the die.

Oricus manufactures a wide range of customized Matrix Tips with sizes and configurations designed to suit your application.



Features

- Maximum surface contact between tip and the die or device
- Can be made in Round, Square, Rectangular and Custom outer profiles
- Size and layout of the vacuum holes are fully customizable
- Certain Engineering Plastics possess E6-E9 Static Dissipative properties to ensure proper Electrostatic Discharge
- Harder than Rubber and softer than Steel/Carbide Multi-Hole Tips
- Higher wear resistance as compared to Rubber and lower wear resistance as compared to Steel/ Carbide Multi-Hole Tips
- Higher temperature resistance as compared to Rubber and lower temperature resistance as compared to Steel/Carbide Multi-Hole Tips

Benefits

- Allows the application of well balanced and strong vacuum suction throughout the Pick and Place process to ensure the elimination of voids
- Matrix Tips offers enhanced surface contact as compared to Groove Tips, ensuring the uniform application of bond force of the die to the substrate
- Engineering Plastic Matrix Tips are more forgiving when less than optimal bond force is applied and will be less likely to damage the die or die surface as compared to Steel or Carbide Flat Tips

	Part Number	X (mm)	Y (mm)
1	PS-EBMH-AS03-00950095-01	0.95	0.95
2	PS-EBMH-AS03-01100110-01	1.10	1.10
3	PS-EBMH-AS03-01200120-01	1.20	1.20
4	PS-EBMH-AS03-01300130-01	1.30	1.30
5	PS-EBMH-AS03-01350135-01	1.35	1.35
6	PS-EBMH-AS03-01450145-01	1.45	1.45
7	PS-EBMH-AS03-01500150-01	1.50	1.50
8	PS-EBMH-AS03-01550155-01	1.55	1.55
9	PS-EBMH-AS03-01750175-01	1.75	1.75
10	PS-EBMH-AS03-01950195-01	1.95	1.95

ESD Properties

Static Dissipative ≥ 10^5 to 10^9 Ω
Insulative ≥ 10^9Ω

Applications

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

Tip Material

Polycarbonate
Delrin/POM
PEEK
Torlon
Vespel
Semitron

Outer Profiles

Square
Rectangular
Custom

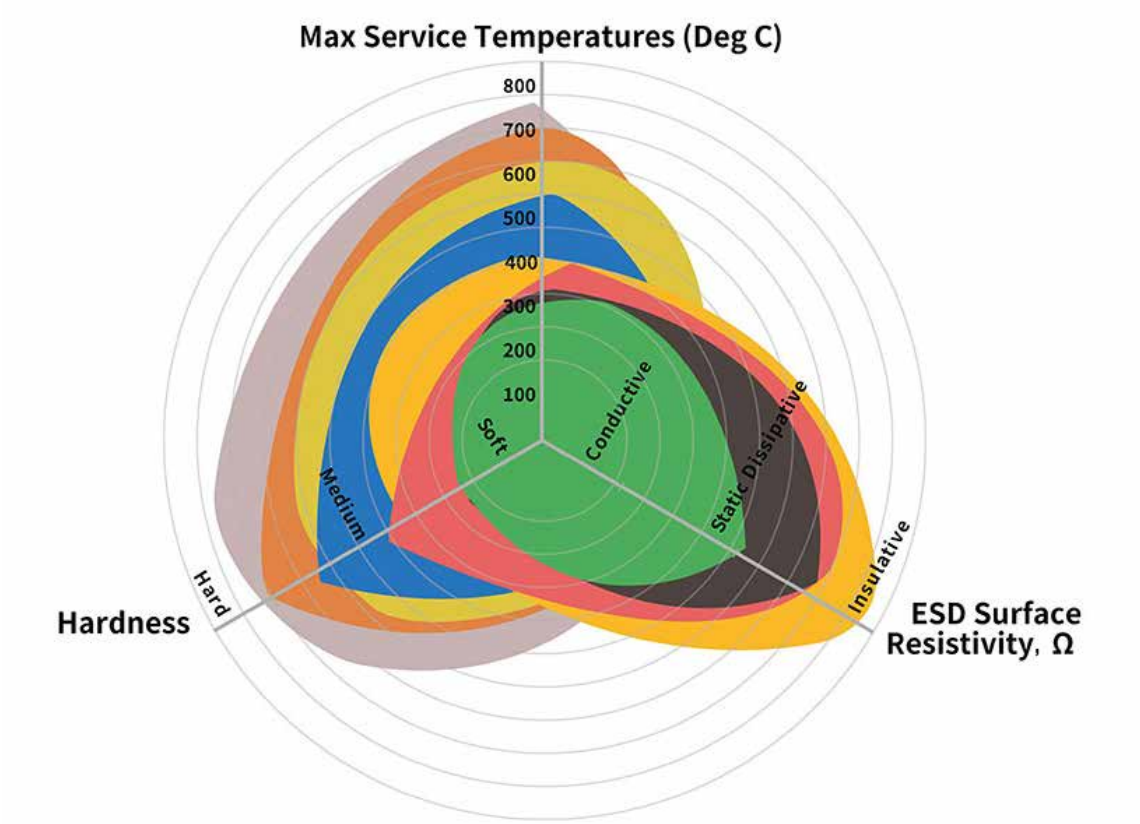
Body Shank Material

Steel
Stainless Steel

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 *WC Line*

Superalloy *SA Line*

Stainless Steel *SS Line*

Tool Steel *TS Line*

Non Ferrous Metals *NF Line*

Performance Engineering Plastics *SP Line*

Engineering Plastics *EP Line*

Rubber *R Line*

ORICUS
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WC LINE

Tungsten Carbide

High Wear & High Temp Resistance

Carbide, K15

Carbide, K30

Carbide, M30

Carbide K40

Carbide, MG30

SA LINE

Superalloy

All-Round Superior Performance

Haynes 25 (L605)

Inconel Alloy 625
Inconel Alloy 718
Incoloy Alloy 925

Nitronic 50
Nitronic 60

Titanium Grade 2

Stellite 6
Stellite 31

SS LINE

Stainless Steel

Balanced Properties

15-5 PH
17-4PH

SUS 430F
SUS 420
SUS 440C
SUS 316
SUS 301
SUS 304
SUS 303

TS LINE

Tool Steel

High Strength

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

NF LINE

Non Ferrous Metals

Special Applications

Aluminium 7075
Aluminium 6061

Copper
Brass
Hovadur K350

SP LINE

Performance Engineering Plastics

Advantageous Performance & Value

Torlon 4432 (PAI)
Torlon 4301 (PAI)
Torlon 5030 (PAI)
Torlon 7130 (PAI)

Vespel SCP5050(P)
Vespel SP 21 (PD)
Vespel SP1 (PI)

ESD Semitron 520
ESD Semitron 420
ESD Semitron 410C
ESD Semitron 225

EP LINE

Engineering Plastics

Economical And Versatile

Acrylic/ Polycarbonate

TECAFORM SD

Delrin ESD
Delrin White
Delrin Black
POM

PEEK
PEEK HT
PEEK GF 30%
PEEK CF 30%

R LINE

Rubber

Geometric Flexibility
ESD Protection

NBR
NBR (Soft)
NBR (Hard)
NBR (Coated)

HPR
HPR (Soft)
HPR (Hard)

UPR

CR (ESD)
CR

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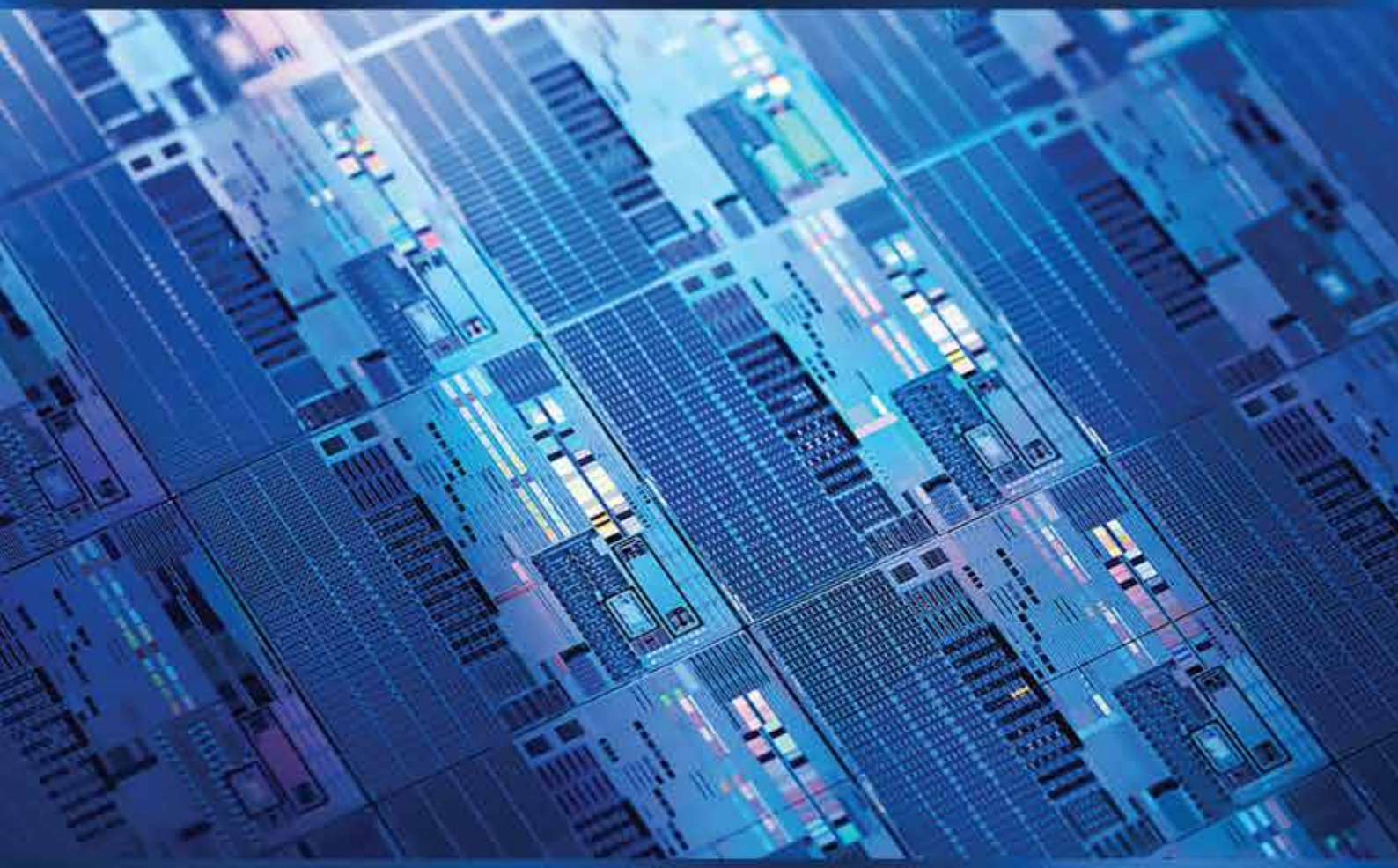

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