

ENGINEERED SOLUTIONS

Dental Burs Blanks



High quality cemented
carbide dental burs blanks

 **HYPERION**
Materials & Technologies

WELCOME TO HYPERION MATERIALS & TECHNOLOGIES

Hyperion Materials & Technologies is an engineering company with more than six decades of experience in the development and manufacturing of innovative diamonds, cubic boron nitrides, and cemented carbides. In addition to innovative materials, Hyperion offers our extensive knowledge, unique services, and application development capabilities to support our customers' competitive needs.

We are over 1,600 people dedicated to creating solutions for your hard and super-hard material needs through partnership, innovation, and invention. Hyperion's offering includes a wide range of cemented carbides for wear parts applications from automotive to medical to food and beverage.

Hyperion's technical expertise and global manufacturing facilities are a foundation from which a network of local sales and customer service teams support our customers in the development of effective solutions.

All Hyperion facilities have received ISO 9001:2015, ISO 14001:2015, and OHSAS 18001:2007 certification. In addition, our manufacturing facility in Barcelona also has IATF 16949:2016 certification and our manufacturing facility in Epinouze, France has EN 9100:2016 certification.

OUR COMMITMENT

We believe in partnering with our customers, and we focus on delivering effective and innovative solutions that help you meet the dynamic demands of your market. As a fully integrated supplier, we manage the full manufacturing life cycle of our products. Managing the entire process ensures that our products are of the highest quality - every time.



RESEARCH & DEVELOPMENT

Hyperion Materials & Technologies has a foundation of heavy investment in pioneering research & development that continues today. We have extensive experience in selecting the cemented carbide grade best suited for your application. Our customers benefit from our accumulated expertise and can leverage our ability to help them improve their manufacturing processes.

Contact your Hyperion sales person to discuss the process to create innovative technologies and materials solutions. We can partner with you to:

- Develop tailored solutions to fit your needs
- Respond to market changes and needs
- Conduct research in our dedicated state-of-the-art laboratories
- Model behavior of both materials and components in our modeling center.



WORLD PRESENCE



 Production units

 Research & development

 Sales offices

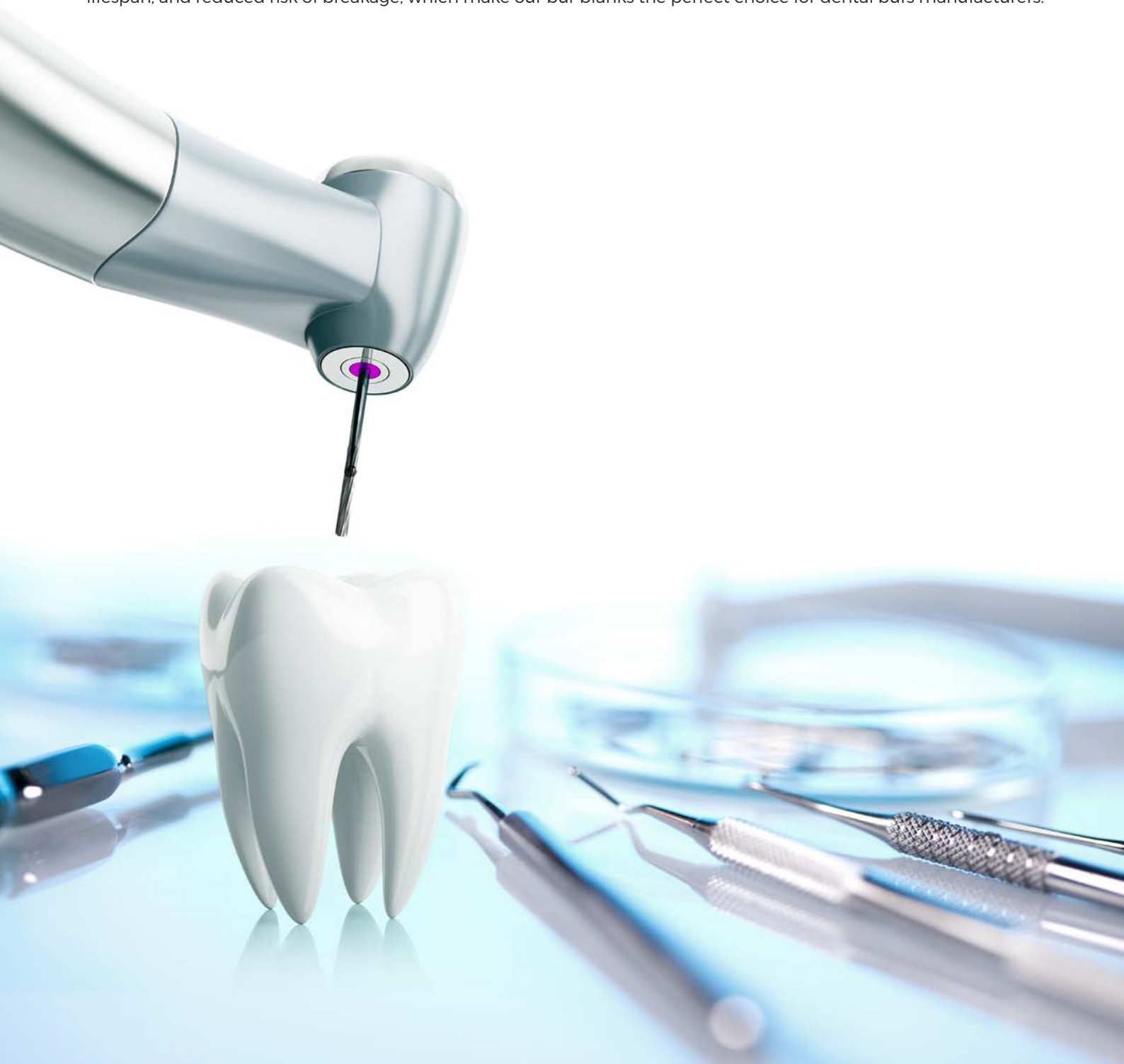
 Sales partners

DENTAL BURS

Hyperion Materials & Technologies has several decades of experience supplying tailor-made solutions to the dental bur industry. Over this time, we have delivered more than 500 million dental burs blanks to the top dental manufacturers. This experience can be leveraged to help you develop the dental bur blank specific to your needs.

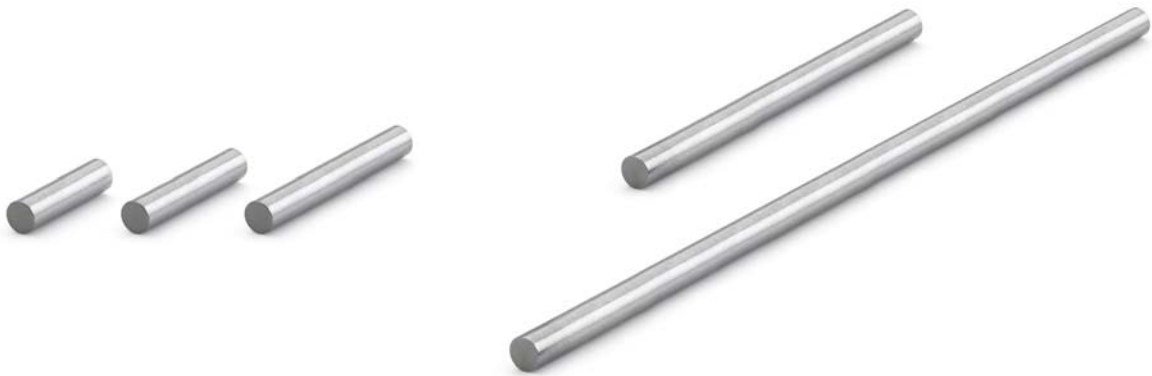
Hyperion has a global footprint with specialized production centers for dental burs blanks. In addition, researchers at our state-of-the-art Carbide R&D Center develop new cemented carbide grades, which can support the growing demand for dental burs.

Hyperion is proud of its unique position in which we maintain full control and complete traceability of our products from the mining of raw materials to delivering finished dental bur blanks. During this fully integrated process, we maintain strict and robust statistical process controls (SPC), which results in high quality carbide burs that help our customers to manufacture better finished products. Hyperion carbide grades ensure easy machinability, a long lifespan, and reduced risk of breakage, which make our bur blanks the perfect choice for dental burs manufacturers.



YOUR PRODUCTS, OUR SOLUTIONS

SOLID BLANKS



CARBIDE TIPS AND PELLETS (to be brazed on stainless steel shanks)



CONE AND BULLET SHAPED BURS



HYPERION STANDARD DENTAL BUR BLANKS

Blank Type	Outer Diameter (mm)	Length (mm)
Solid blanks	1.6 - 1.8	16 - 30
	2.35 - 6	22 - 57
Pellets (to be brazed/welded on steel shank)	1.6 - 3.2	2.2 - 8 (Open tolerance) 5 - 11 (Ground tolerance)
Cone/bullet shaped blanks	<10	<16

Finish Options:

Nickel coating

Roughness Average (Ra) < 0.2 - 0.4

OUR SERVICES BECOME YOUR BENEFITS

Our Service	Your Benefits
Micron range tolerances on bur shank	Streamlines the manufacturing process and reduces manufacturing cost (reduced incoming inspection, grinding, etc.)
Submicron grade cemented carbides with consistent quality	Reduces risk of breakage, wear, and chipping, which leads to reduced vibration while using the bur
Multiple manufacturing locations with nearly unlimited capacity	Fast supply reaction in response to unexpected demand increases
Engineering support for materials and process	Product optimization in support of your manufacturing process
Dedicated support from local product specialists	Prompt proactive service
Dedicated customer service	Easy administrative procedures
Logistics expertise	Flexible and fast supply across the world

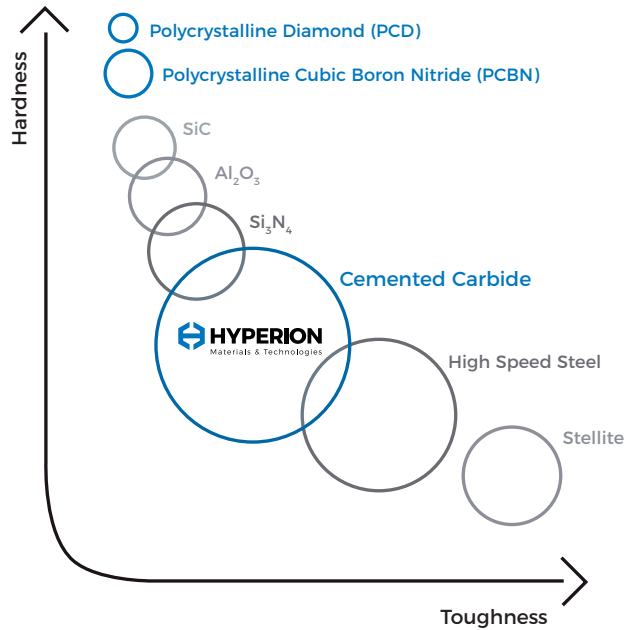


CEMENTED CARBIDE

A UNIQUE MATERIAL FOR UNIQUE NEEDS

Cemented carbide is one of the most successful composite engineering materials ever produced. Cemented carbide's unique combination of strength, hardness, and toughness satisfies the most demanding applications. Hyperion Materials & Technologies has been a leader in the cemented carbide industry for over 60 years.

A key feature of the cemented carbide is the potential to vary its composition so that the resulting physical and chemical properties ensure maximum resistance to wear, deformation, fracture, corrosion, and oxidation. In addition, the wide variety of shapes and sizes that can be produced using modern powder metallurgical processing offers tremendous scope to design cost-effective solutions to many of the problems of component wear and failure encountered in both the engineering and domestic environment.



A PROVEN MATERIAL IN THE DENTAL INDUSTRY

Tungsten carbide has been used extensively in the dental industry for decades. Tungsten carbide is much harder than stainless steel, and thanks to the Hyperion submicron grain size, it has a high resistance to wear, chipping, and breakage.

General comparison of cemented carbide grades used for wear parts vs steel:

	Density (g/cm ³)	Hardness (HV30) [HRA]	Compressive Strength (MPa)	Fracture Toughness K _{1c} (MN/m ^{3/2})	Young's Modulus (GPa)	Thermal Expansion (10 ⁻⁶ /°C)
Cemented carbide	13 - 15.5	900 - 2200 [83.5 - 94]	3000 - 8000	7 - 25	430 - 690	4.8 - 6
316 Stainless steel	7.8 - 8.0	150 - 200 (converted)	170 - 380	100 - 190	190 - 205	15 - 18

Tungsten carbide burs work by cutting/chipping, which leaves a tooth surface smoother and requiring less polishing than using diamond burs.

In addition, tungsten carbide can be brazed or welded to the stainless steel shank. Hyperion can provide a unique nickel coating that is specially formulated for this purpose.

