

NAME	COLOUR	PROPERTIES	APPLICATION	HARDNESS	TYPICAL THK $\mu\text{m}$	COEFF. OF FRICTION
<b>TiN</b> Titanium nitride	Gold shades, from light to yellow gold	Very high hardness, toughness, and wear resistance. Low coefficient of friction. Good corrosion resistance. Biocompatibility.	<ul style="list-style-type: none"> <li>• Cutting, punching and forming tools.</li> <li>• Injection moulding components.</li> <li>• Medical devices and surgical tools.</li> <li>• Aerospace and automotive components.</li> </ul>	2000-3400 HV	0.5-5	0.4-0.6
<b>ZrN</b> Zirconium nitride	From nickel to light gold and brass	Excellent elastic modulus, hardness, and toughness. High thermal stability, corrosion and wear resistance. Biocompatibility.	<ul style="list-style-type: none"> <li>• Cutting, punching and forming tools.</li> <li>• Biomedical components.</li> </ul>	2500-2900 HV	0.5-5	0.5
<b>TiCN</b> Titanium carbonitride	From bronze to grey	High hardness. Good abrasive wear, corrosion, and chemical resistance. Biocompatibility.	<ul style="list-style-type: none"> <li>• Cutting, punching, forming, bending, and embossing tools.</li> <li>• Stamping applications.</li> </ul>	2700-3500 HV	0.5-5	0.2-0.3
<b>ZrCN</b> Zirconium carbonitride	From light bronze to grey	High hardness and toughness. Excellent abrasive wear and corrosion resistance. Low friction coefficient. Biocompatibility.	<ul style="list-style-type: none"> <li>• Cutting, stamping, and forming tools.</li> <li>• Biomedical devices.</li> </ul>	2500-3600 HV	0.5-5	0.3-0.5
<b>CrN</b> Chromium nitride	From light to dark grey	High hardness. Good toughness. High corrosion, wear, abrasion, and oxidation resistance. Low friction coefficient.	<ul style="list-style-type: none"> <li>• Cutting tools.</li> <li>• Engine parts.</li> <li>• Mold and forming dies.</li> <li>• Sliding and rotating components.</li> </ul>	1400-2500 HV	0.5-5	0.3-0.4
<b>CrCN</b> Chromium carbonitride	From dark grey to black	High toughness and hardness. Excellent chemical resistance. High corrosion and abrasive wear resistance. Low friction coefficient.	<ul style="list-style-type: none"> <li>• Tools for drawing, pressing, bending and stamping of copper and other non-ferrous materials</li> <li>• Tools for metal forming of abrasive materials.</li> <li>• Plastic moulding application to improve mould release.</li> </ul>	2000-2700 HV	0.5-5	0.2-0.35
<b>DLC</b> Diamond-Like Carbon	From graphite to black	High hardness. Low friction coefficient. Excellent chemical stability, oxidation, and wear resistance Biocompatibility.	<ul style="list-style-type: none"> <li>• Industrial and automotive components (e.g. pistons, gears, mechanical seals)</li> <li>• Injection moulding components (e.g. dies, ejection pins, sliding machine parts)</li> <li>• Durable consumer goods (e.g. wristwatches, jewellery, golf clubs)</li> </ul>	1500-3200 HV	0.5-4	0.1-0.2
<b>DLC<sub>a-C:H18</sub></b> Metal-doped amorphous carbon with hydrogen	Various shades of grey	Good hardness. High chemical stability, oxidation and wear resistance. Low coefficient of friction.	<ul style="list-style-type: none"> <li>• Industrial and automotive components (e.g. pistons, gears, mechanical seals)</li> <li>• Injection moulding components (e.g. dies, ejection pins, sliding machine parts)</li> <li>• Durable consumer goods (e.g. wristwatches, jewellery, golf clubs)</li> </ul>	8000-1500 HV	0.5-4	0.2