Article published on June 12th 2012 | Marketing

There are several applications in the modern world that incorporate the use of tungsten carbide. This inorganic chemical compound is best known for its extreme hardness that makes it just perfect for a number of heavy duty operations. As the name suggests, this compound is made by a fusion of tungsten metal and carbon. It can be used for drilling and cutting in the industrial and medical sector. In day-to-day parlance, most engineers and technicians refer to it as simple carbide.

This compound comprises equal proportions of tungsten and carbon atoms, and in its raw form itâ€™s a powder. However, it can be processed further in order to make different components such as drill bits, tungsten carbide ball, valve parts etc. In fact, today a number of jewelry items such as rings and neck pieces are also made from carbide. Jewels made from this inorganic compound are not only much stronger, but less susceptible to scratching and breaking. Fashion accessories made in carbide are all the rage today. More importantly, this compound is not as expensive as other precious metals such as silver, gold and platinum.

As for the hardness of carbide, it is at least three times stiffer and denser as compared to steel. It is also denser than titanium, which makes it perfectly suited for rugged use. In the engineering world, sapphire and tungsten carbide are considered to have the same level of hardness. The fact that it can be cut and polished only with diamond and cubic boron nitride proves the high hardness levels of this compound. Apart from being used for manufacturing different parts, this compound is also used for coating different metals or elements so as to protect their surface against abrasions and scratches. Numerous industrial machines are coated with this compound to provide them endurance to friction.

Another quality that makes this compound so compatible in the industrial and manufacturing sector is that it is not susceptible to damage by acids. The only material that should be kept away from carbide is hydrofluoric acid or nitric acid. Apart from that, it is safe for use in different operations. Also, its melting point is relatively higher (up to 2800 degrees centigrade).

Now, we shall discuss some of the commonly known uses of this compound. Apart from being used in the manufacturing process of tungsten carbide ball, it is also used for making ammunition components and cutting tools. Due to its hardness, armor piercing ammunition is usually made from tungsten carbide. Apart from this, this is also used in high precision medical surgical tools such as scissors. Overall, this compound requires a higher investment as compared with other metals, but it offers a long service life making the initial investment worthwhile.

Article Source:
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Article Keywords:
Tungsten carbide, cemented carbide, tungsten carbide balls

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