



- EN TIGRALLOY – Technical Data
- DE TIGRALLOY – Technische Daten
- FR TIGRALLOY – Caractéristiques techniques
- IT TIGRALLOY – Dati tecnici
- ES TIGRALLOY – Datos técnicos

EN TIGRALLOY, a cutting material, consisting of a mixture of hard chromium and tungsten carbide that are embedded in a tough cobalt matrix. This results in an ideal combination of high hardness and high toughness. Therefore TIGRALLOY is an ideal cutting material for many kinds of solid wood. In addition to the good wear resistance, there is a high heat resistance. Very good brazeability and the opportunity to grind extremely sharp cutting edges.

Characteristics:

Heat resistance: up to 800°C / 1500°F - Highly corrosion resistant - Extremely shock proof

Hardness: TL48: 48HRC - TL60: 60 HRC

DE TIGRALLOY besteht aus harten Chrom- und Wolframkarbiden, die in einer zähen Kobaltmatrix eingelagert sind. Daraus entsteht eine ideale Kombination von hoher Härte und besonders guter Zähigkeit. TIGRALLOY ist damit ein idealer Schneidstoff für die Bearbeitung vieler Massivhölzer. Zu einer hohen Verschleißfestigkeit kommt eine hohe Hitzebeständigkeit, eine sehr gute Lötbarkeit und die Möglichkeit, mit sehr scharfen Schneidkanten zu arbeiten.

Eigenschaften:

Hitzebeständigkeit: bis 800°C - Sehr korrosionsbeständig - Hohe Bruchfestigkeit

Härte: TL48: 48HRC - TL60: 60 HRC

FR TIGRALLOY est constitué de carbures de chrome et de tungstène durs qui sont logés dans une matrice de cobalt résistante. TIGRALLOY est ainsi un matériau de coupe idéal pour l'usinage de nombreux bois massifs. Outre une grande résistance à l'usure, il présente également une forte résistance à l'échauffement, une excellente brasabilité et la possibilité de travailler avec des arêtes de coupe très vives.

Propriétés:

Résistance à la chaleur: jusqu'à 800°C - Très résistant à la corrosion - Grande résistance à la rupture

Dureté: TL48: 48HRC - TL60: 60 HRC

IT TIGRALLOY è composta da carburo duro di cromo e tungsteno, incastonati in una matrice di cobalto tenace. Una combinazione ideale di durezza e di resistenza. TIGRALLOY è oltretutto materiale ideale al taglio di molti tipi particolari di legno. La buona resistenza all'usura nonché la grande resistenza termica e una buona saldabilità permettono l'uso di taglienti molto affilati.

Caratteristiche:

Resistenza termica: fino a 800°C - Alta resistenza alla corrosione - Alta resistenza flessionale

Durezza: TL48: 48HRC - TL60: 60 HRC

ES TIGRALLOY se compone de carburos duros de cromo y volframio que están depositados en una matriz de cobalto resistente. Así se consigue una combinación ideal de alta dureza y de resistencia especialmente buena. Por lo tanto, TIGRALLOY es un material de corte ideal para el labrado de muchas maderas macizas. A esa alta resistencia de desgaste se añade una alta resistencia refractaria, una buena soldadura y la posibilidad de trabajar con aristas cortantes muy vivas.

Propiedades:

Resistencia a calor hasta 800°C - Alta resistencia a la corrosión - Alte resistencia a la rotura

Dureza: TL48: 48HRC - TL60: 60 HRC

EN TECHNICAL DATA AND APPLICATION RECOMMENDATIONS

(for more information please see our TIGRALLOY brochure and our technical guidebook "Carbide for cutting tools")

TIGRALLOY, an alloy which mainly consists of cobalt, chromium and tungsten, takes a special position within the cutting materials being neither tungsten carbide nor HSS.

Even though its hardness is rather low, TIGRALLOY can achieve multiple lifetimes of tungsten carbide in many applications because its wear pattern is completely different. In addition, TIGRALLOY is extremely corrosion resistant, tough and heat resistant up to around 800°C / 1500°F. The high bending strength and material composition allow steep angles and very sharp cutting edges which reduces cutting pressure and can achieve excellent surface qualities. TIGRALLOY is made by powder metallurgy and thus, compared to similar, cast materials 100% void-free.

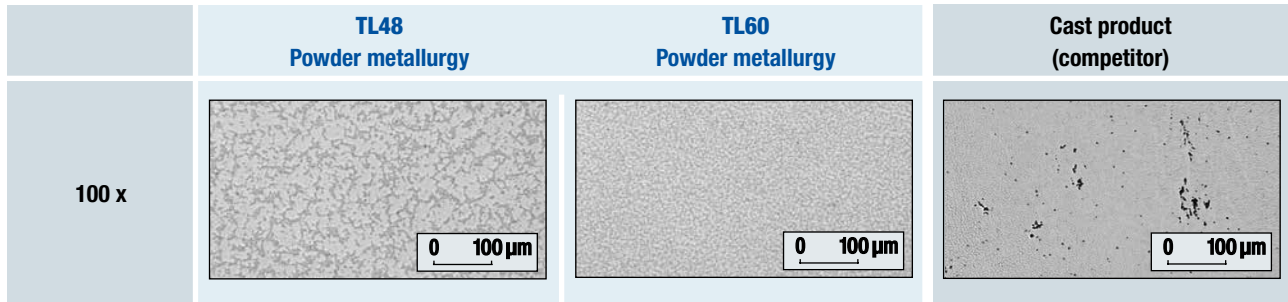


Fig. 1: Homogeneous, void-free TIGRALLOY made by powder metallurgy compared to a similarly alloyed but cast product.

2 grades are offered:

TL48 (hardness 48 HRC), especially as saw tips for processing green lumber. Here, the high toughness is used to make TL48 the ideal cutting material for circular, band- and gangsaws for the saw mill industry. Available in shapes of triangles, rectangles and typical saw tip shapes.

TL60 (hardness 60 HRC) for indexable inserts, blanks for profiling, planer knives, back corrugated knives and STBs for brazed tools: perfect surface qualities and excellent lifetime in the described types of wood (without gluelines), compare to Fig. 2. In addition, weight of the blades is reduced by around 40%.

TIGRALLOY provides decisive advantages in most solid woods:

- **Tool life:** in many types of wood tool life is increased substantially compared to tungsten carbide, especially in hardwoods.
- Excellent **surface quality:** The high bending strength and the composition of the material allow very sharp cutting edges, which reduce the cutting pressure.
- Increased **productivity** as TIGRALLOY makes possible to run in greater feed rates and revolution speeds.
- **Secure processing:** TIGRALLOY is required to 100% free of macropores, thus no multiple production due to porosity.

TL48 - for circular saw blades and band saws

recommended:

nearly all kinds of raw woods, frozen wood
recycling of wood with impurities (e.g. pellets)

not recommended:

board materials, glued-up wood
extremely abrasive or resinified woods

TL60 - for planers, indexable inserts and brazed profiling tools

recommended:

Abachi	Incense cedar	Pine
Afromosia	Larch	Plane
Afzelia (min. 12% humidity)	Limba	Poplar
Alder	Mahogany (American red)	Ramin
Ash	Makoré	Redwood
Avodiré	Maple (European)	Sapele
Beech (min. 12% humidity)	Mengkulang	Sipo
Birch (European)	Meranti	Sugar pine
Cedar (Western Red)	Oak (American Red)	Tasmanian Oak
Cedar	Oak (European)	Tola branca
Cherry	Oak (Japanese)	Walnut
Chestnut (cultivated)	Okan	Willow
Elm	Okoumé	
Fir	Oregon pine	
Framiré	Parana pine	
Hemlock	Pear	

not recommended:

board materials, glued-up wood,
extremely abrasive or resinified woods

Afzelia (dry)	Mukulungu
Azobé	Muninga
Balau	Oak American white
Beech (dry)	Ogea
Boxwood	Padouk
Bubinga	Panga Panga
Hickory	Purpleheart
Hornbeam	Red kabbes
Keruing	Rosewood Rio
Lignum vitae	Saligna gum
Maple American	Tali
Merbau	Teak
Movingui	Wengé

Fig.: Application recommendations for both TIGRALLOY grades.