

## EternAloy® “Hard ‘N Tough”

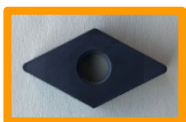
*Allomet's EternAloy® HNT Inserts and Insert Blanks are produced utilizing powdered metals that possess extreme combined hardness and toughness properties that deliver exceptional wear performance. EternAloy® HNT powders are produced from a patented and proprietary powder metal production method known as “Tough-Coated Hard Powder (TCHP)” process technology that provides material strength, durability and wear-resistance properties never before attainable.*



- HNT Carbide (70 to 300% longer tool life) in general purpose machining Rc 20 to Rc 40

- HNT Carbide Max (40 – 250% longer tool life) in general purpose and (200 - 440% longer tool life) in hardened material Rc 32 to Rc 60

- Faster speeds and feeds compared to conventional carbide inserts



- HNT material brazed on tip for improved wear resistance and toughness over tungsten carbide

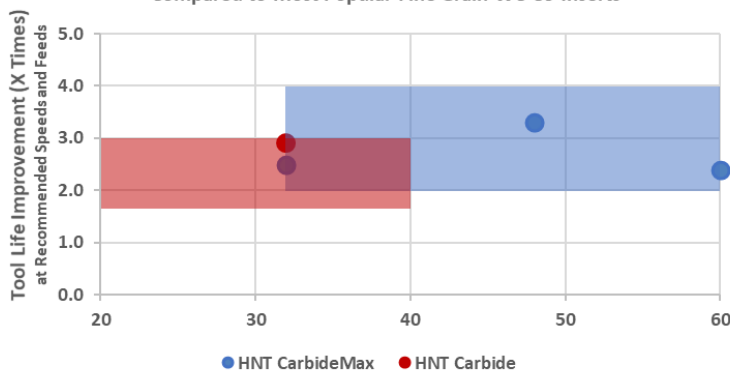
- Solid carbide body for maximum rigidity

## Demonstrated Product Performance Benefits

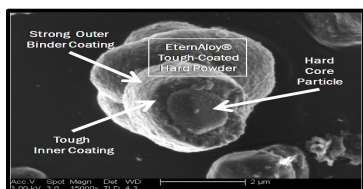
### Test Parameters

- All tools were PVD coated together
- Tungsten carbide tools were 10% cobalt submicron tungsten carbide
- Flood coolant
- Contact Allomet for recommended speeds and feeds

**HNT Performance Advantage**  
Compared to Most Popular Fine Grain WC-Co Inserts



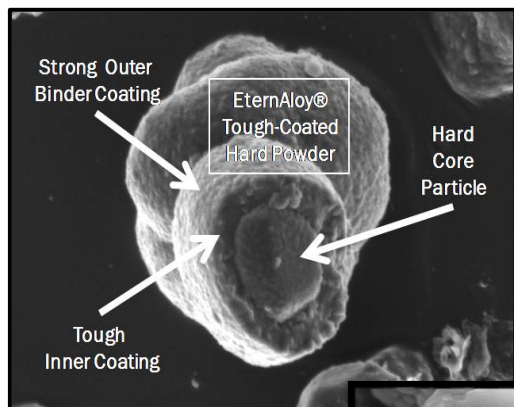
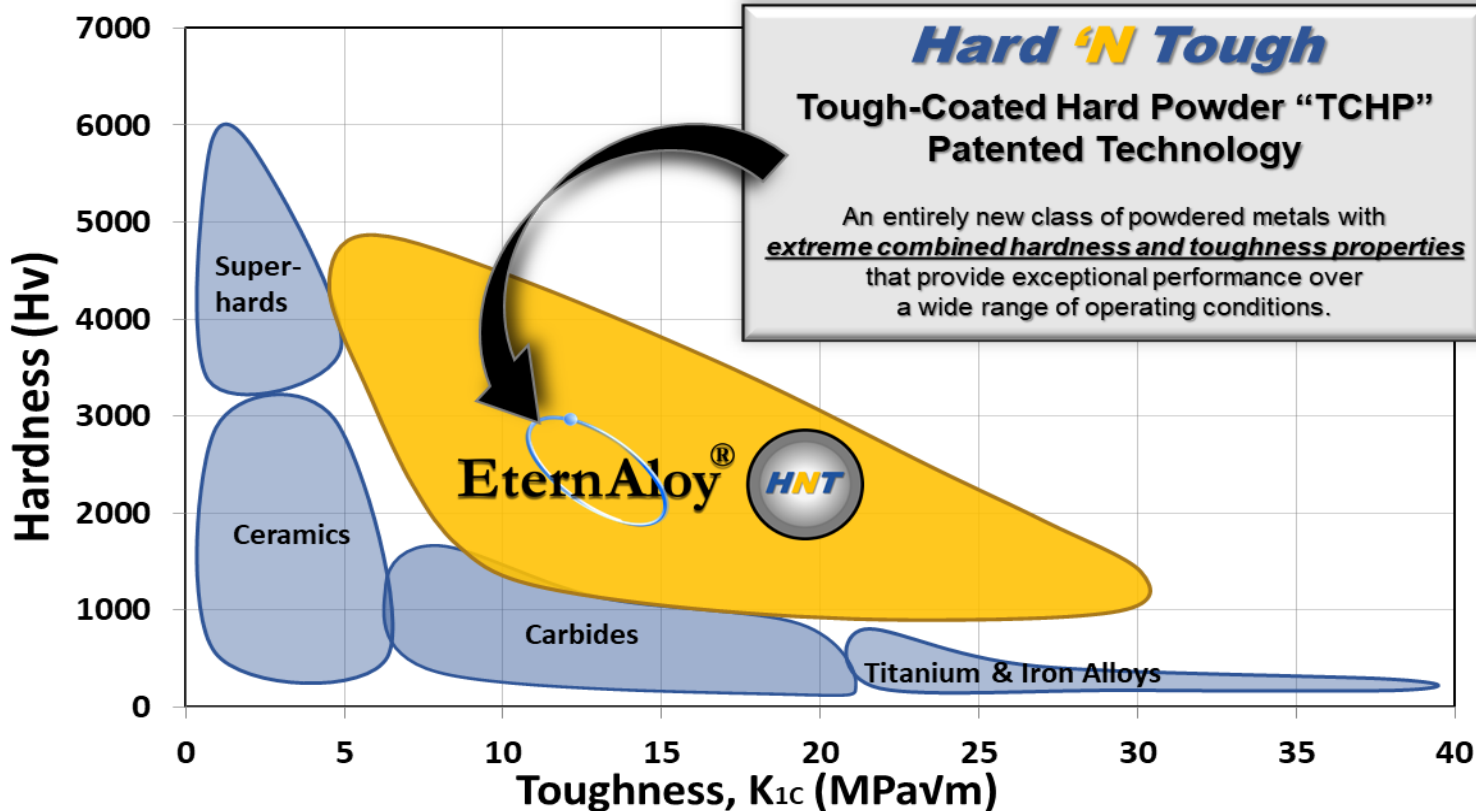
**EternAloy® Hard ‘N Tough.....Taking Wear Resistance to the Extreme.™**



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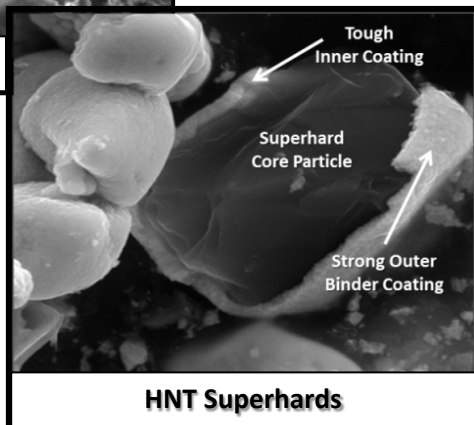
[www.allomet.com](http://www.allomet.com)





**HNT Ceramics**

(Note: EternAloy® HNT particles intentionally fractured to reveal structure of uniform protective shell)



**HNT Superhard**

- Allomet is the world's only designer and producer of nano-engineered EternAloy® HNT metallized powders, utilizing globally-patented Tough-Coated Hard Powder (TCHP) technology.
- HNT products consist of extremely hard core particles encapsulated in a very tough and uniform protective shell (and optional outer binder layer).
- HNT products can be pressed & sintered into solid shapes or applied as a surface coating to deliver exceptional wear-resistance and thermal management performance beyond other superhard, ceramics, or carbides.
- HNT grades can be provided as highly-flowable ready-to-press powders.
- HNT shrinkage during pressing and sintering is very similar to conventional carbide grades.
- HNT products have excellent adhesion with common PVD and CVD tool surface coatings.
- Custom-designed HNT development services are available from Allomet for unique applications.