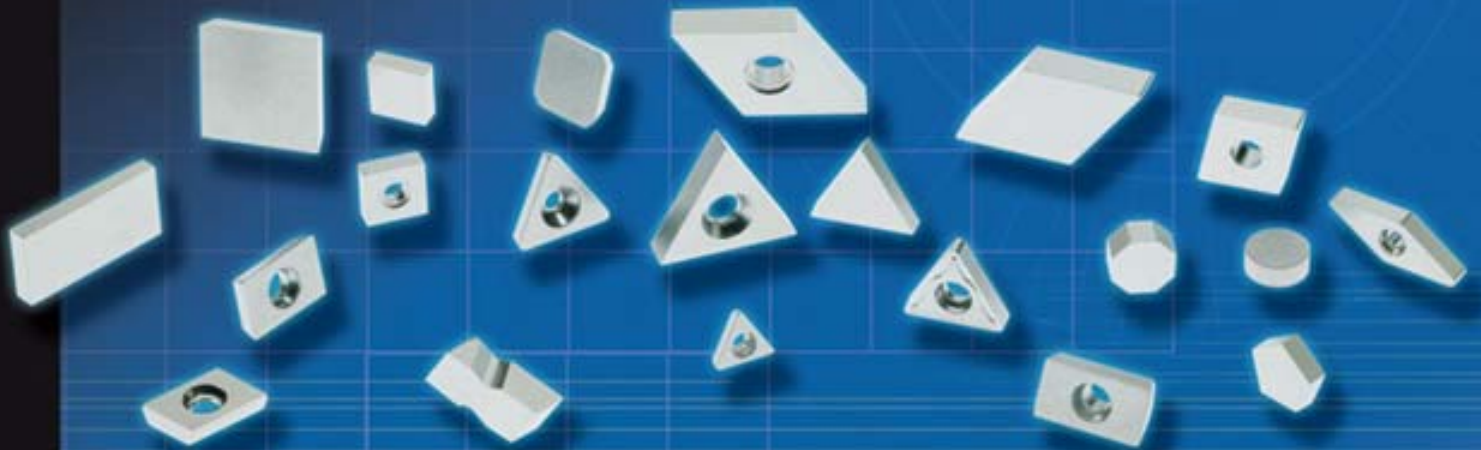


CERMETS

Firth Sterling offers a complete line of Cermet grades and an extensive tooling catalog to meet most of your Cermet requirements.



Titanium Carbonitride-based (TiCN) powder metallurgy products consisting of hard carbonitride grains in a tough metallic binder phase expand your application range beyond typical carbide and ceramic tooling materials. The transition phase around the TiCN is the reason for the cermet's high strength. The microstructure is characterized as "spinodal decomposition" which results in minimal grain growth and consistently produces porosity-free material.

Some Benefits of TiCN

- Achieve higher surface speeds than conventional carbide
 - Extend tool life beyond C8 carbide grades
 - Wear resistance allows closer size control in critical operations
 - Excellent surface finish achieved with uncoated inserts
 - Edge retention in interrupted cutting superior to ceramics
 - Chemical stability in highly reactive work materials
 - Resistant to plastic deformation



ATI Firth Sterling

Allegheny Technologies

www.atifirthsterling.com

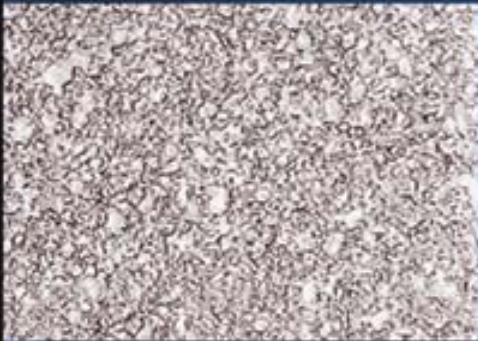
CERMETS



Grade SD3 Properties:

Primarily used in high-speed turning and finishing applications. SD3 offers hot hardness approaching ceramics while providing sufficient strength to endure interruptions experienced in typical carbide cutting tool applications.

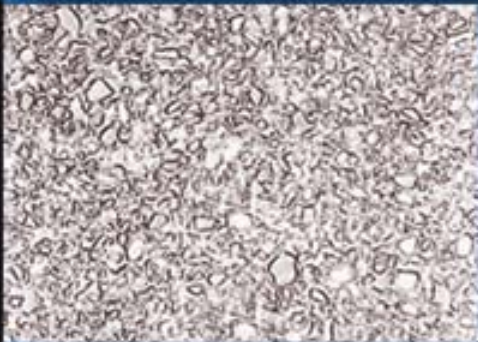
| | |
|-------------------------------------|---------|
| HARDNESS (R_a) | 93.0 |
| DENSITY (g/cc) | 6.02 |
| TRANSVERSE RUPTURE STRENGTH – (psi) | 225,000 |



Grade SD5 Properties:

Typically used in a broad range of cutting applications varying from classes C2 to C3 (K10 to K20). It is recommended for roughing and semi-finishing carbon, stainless, alloy and tool steels as well as cast irons and other materials in the 30-50 HRc range.

| | |
|-------------------------------------|---------|
| HARDNESS (R_a) | 92.0 |
| DENSITY (g/cc) | 6.30 |
| TRANSVERSE RUPTURE STRENGTH – (psi) | 300,000 |



Grade SDM14 Properties:

Premium cermet milling grade. Enhanced shock resistance suitable for interrupted cutting, deep grooving and boring. This grade bridges the gap between conventional tungsten carbide grades and standard cermet materials.

| | |
|-------------------------------------|---------|
| HARDNESS (R_a) | 92.0 |
| DENSITY (g/cc) | 6.60 |
| TRANSVERSE RUPTURE STRENGTH – (psi) | 325,000 |



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