T-TURN™ TC430

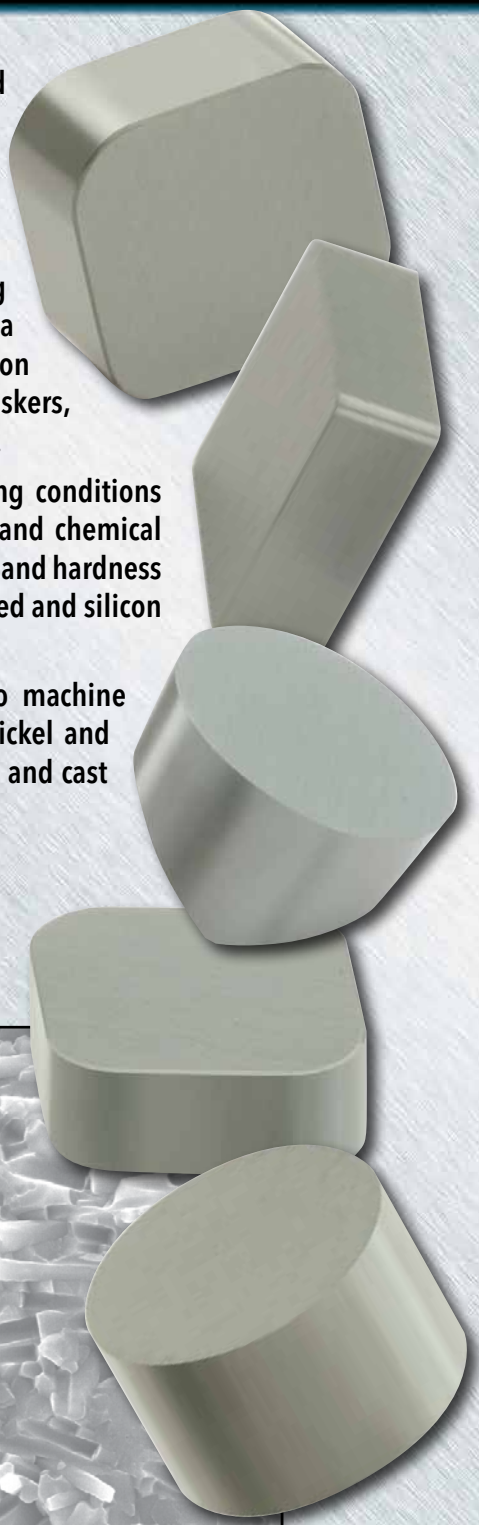
Whisker Reinforced Ceramic Grade

A newly developed SiC whisker reinforced ceramic grade for machining high strength and high temperature alloys is now available from Ingersoll.

Grade TC430 has been developed for machining super alloys at high cutting speeds. With a composition of alumina (Al2O3) matrix and a strong oxidation resistance with its silicon carbide (SiC) whiskers, the new grade offers exceptional toughness.

TC430 can be applied to high speed cutting conditions due to its combination of micro-structural and chemical advantages that deliver excellent toughness and hardness levels when compared to other alumina based and silicon nitride based ceramics.

These features enable the TC430 grade to machine exotic materials such as inconel, stellite, nickel and cobalt based alloys and also hardened steel and cast irons at very high cutting speeds.



Features:
- Whisker reinforced substrate
- Exceptional toughness
- All standard inserts have T6 edge prep (.004" @ 20 deg)

Insert Styles:

Negative:
- CNGN – ½" IC
- RNG – 3/8", ½" ¾" IC
- SNGN – ½" IC

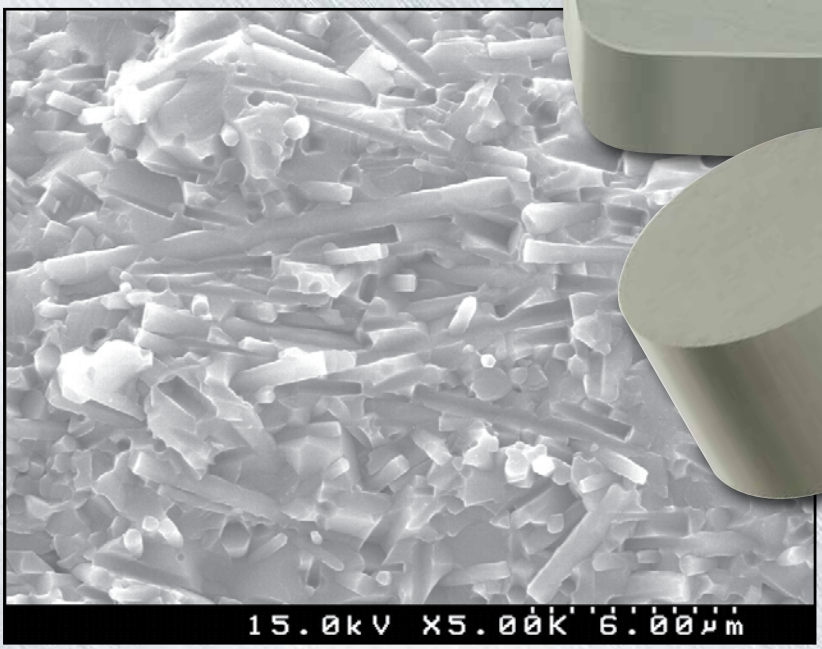
Positive:
- RCGX – 3/8", ½" IC
- RPGN – ½" IC
- RPGX – 3/8", ½" IC

Applications:

Primary:
High temp alloys

Secondary:
Hardened steel & Cast iron at high cutting speeds

MICROSTRUCTURE



Member IMC Group
Ingersoll Cutting Tools

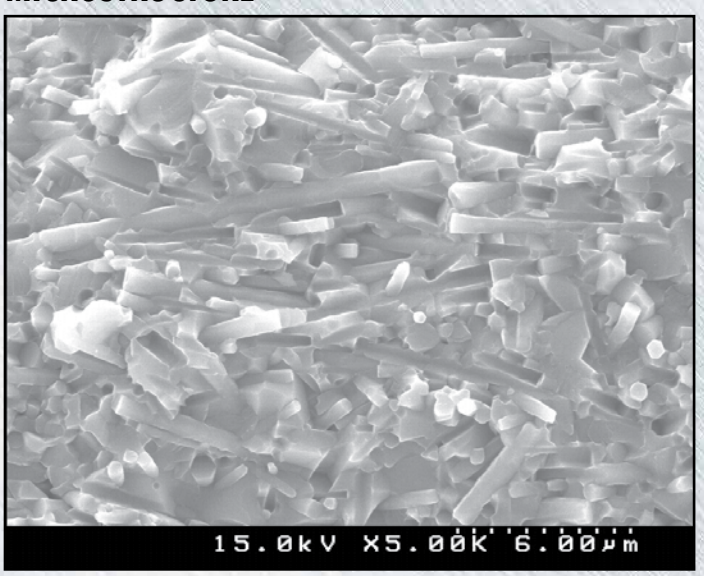
FEATURES

- SiC whisker reinforced ceramic grade
- High hardness and high fracture toughness levels
- Suitable for general turning and milling applications
- Ideal for machining Ni-based superalloys such as inconel, waspalloy, Rene as well as hardened steels and castings at extremely high cutting speeds.

PHYSICAL PROPERTIES

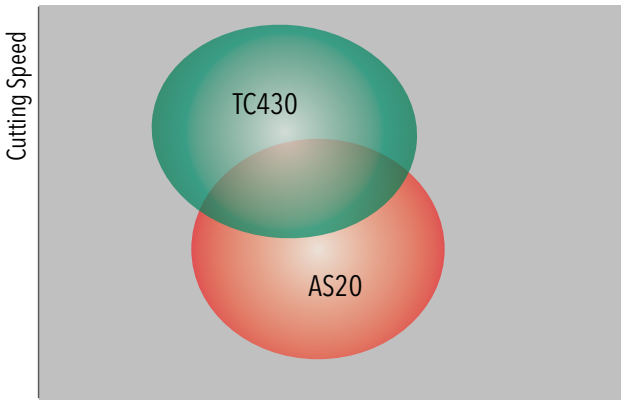
Density	Hardness (Hv)	Fracture Toughness, KIC
3.7	2,050 ~ 2,100	4.5 ~ 5.5

MICROSTRUCTURE



APPLICATION RANGE

Material: High Temperature Alloys



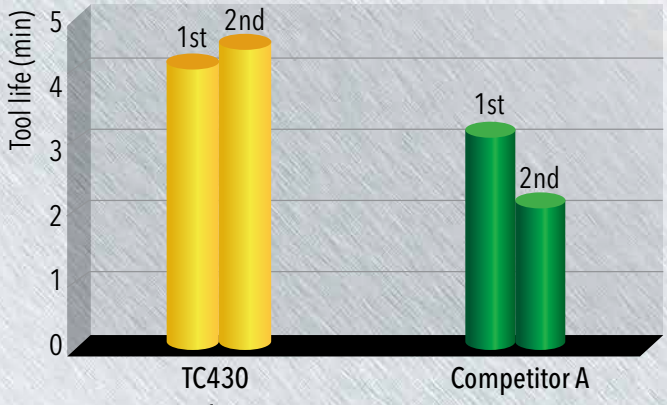
Recommended Cutting Conditions for High Temperature Alloys

	V (SFM)	F (IPR)
Turning	500-1300	.004-.012
Milling	1300-3280	.004-.008

CUTTING TEST

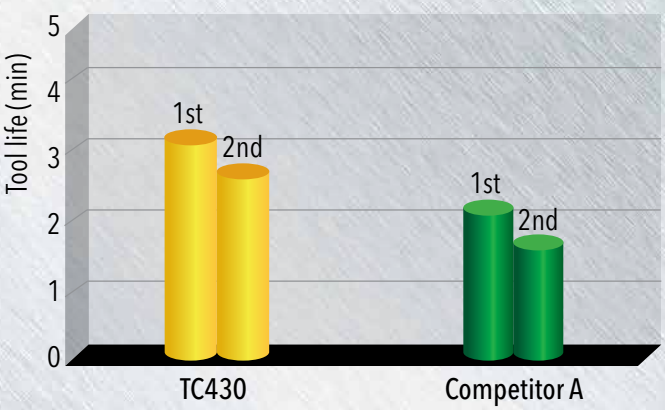
Material: Inconell 718 (HB280-330)
Insert: SNG 432

- 1st Test Under Normal Machining Speed



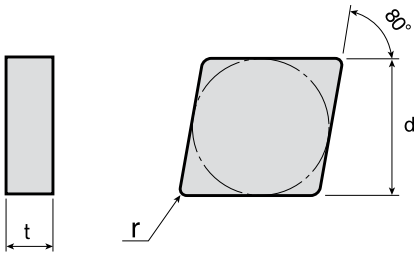
V=500 SFM, f=.008 IPR, DOC=.020, wet

- 2nd Test Conducted at High Speed



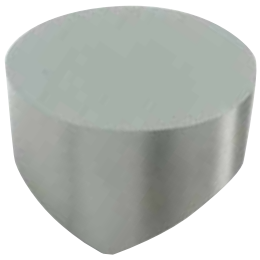
V=850 SFM, f=.008 IPR, DOC=.020, wet

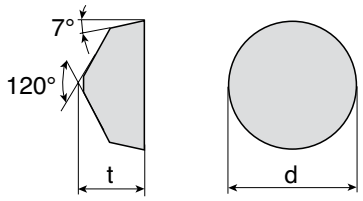
CNG T6



ANSI Number	ISO Number	Dimensions (inch) d	t	r	Grade TC430
CNG 432 T6	CNGN 120408 T6	.500	.187	.031	•
CNG 433 T6	CNGN 120412 T6	.500	.187	.047	•
CNG 452 T6	CNGN 120708 T6	.500	.312	.031	•
CNG 453 T6	CNGN 120712 T6	.500	.312	.047	•

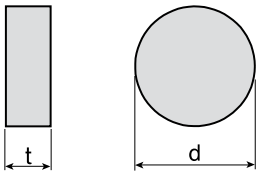
RCGX T6





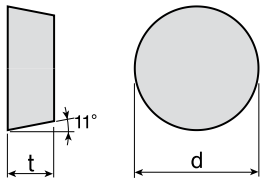
ANSI Number	ISO Number	Dimensions (inch) d	t	Grade TC430
RCGX 35 T6	RCGX 090700 T6	.375	.315	•
RCGX 45 T6	RCGX 120700 T6	.500	.315	•

RNGN



ANSI Number	ISO Number	Dimensions (inch) d	t	r	Grade TC430
RNG 32 T6	RNGN 090300 T6	.375	.125	-	•
RNG 43 T6	RNGN 120400 T6	.500	.187	-	•
RNG 46 T6	RNGN 120700 T6	.500	.312	-	•
RNG 65 T6	RNGN 190700 T6	.750	.312	-	•

RPGN



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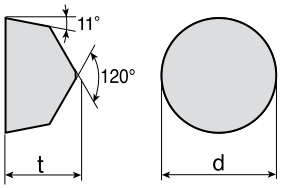
RPGX



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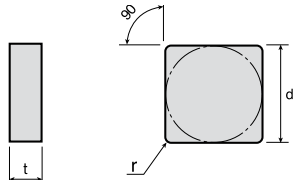
RPGX 35 T6	RPGX 090700 T6	.375	.312	-		•
RPGX 45 T6	RPGX 120700 T6	.500	.312	-		•

SNGN



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SNG 433 T6	SNGN 120412 T6	.500	.187	.047		•
SNG 452 T6	SNGN 120708 T6	.500	.312	.031		•
SNG 453 T6	SNGN 120712 T6	.500	.312	.047		•

AVAILABILITY
In stock

PRICE
Available in the GAL system