

# YAMATO GOKIN CO., LTD.

## ALLOY DATA SHEET

### **NC50**

#### **1. Characteristics**

- Beryllium-free
- Excellent electrical conductivity
- superior thermal conductivity
- Excellent wear resistance

#### **2. Related Specifications**

- RWMA Class 3
- JIS Z 3234

#### **3. Applications**

- Electrode for resistance welding
- High-performance engine parts
- Plunger tips for die-casting machines
- Brake material in the amusement park ride
- Backing plates under target metals for semiconductors

#### **4. Chemical Composition**

Designation: NC50

(%)

Element	Ni	Si	Cr	Sn	Cu
Min	1.5	0.5	0.5	0.1	balance
Max	3.0	1.5	1.5	0.3	

#### **5. Physical Properties**

Density	g/cm <sup>3</sup>	8.7
Young's modulus	N/mm <sup>2</sup>	120,000
Coefficient of expansion 20 to 300° C	× 10 <sup>-6</sup> /° C	17
Thermal conductivity	W/m K	180
Electrical conductivity	IACS %	45

## 6. Available forms/Mechanical Properties

Size/condition	forms/process							Mechanical properties						Available forms																			
	Bars			Tubes			Forgings	Tensile strength Mpa	Yield strength 0.2% offset Mpa	Elongation %	Hardness			Semi-finished products										parts									
	Extruded or forged	Drawn	Continuous casting	Extruded	Drawn	Continuous casting					HB	HRB	HV	Rounds	Squares	Flats	Hexagones	Section	Tubes	Plates	Discs	Rings	Forged blanks	stamped	machined								
Bars $16 \leq \varphi \leq 45\text{mm}$	■	■					$\geq 690$	-	$\geq 9$															●	●								
Bars $40 \leq \varphi \leq 200\text{mm}$	■			■			$\geq 650$																										●
Plates $15 \leq \text{Thickness} \leq 105\text{mm}$							$\geq 650$																										
																																	●

All information is intended as a guide to performance and application suitability.  
[info2@yamato gokin.com](mailto:info2@yamato gokin.com)

October 2013

