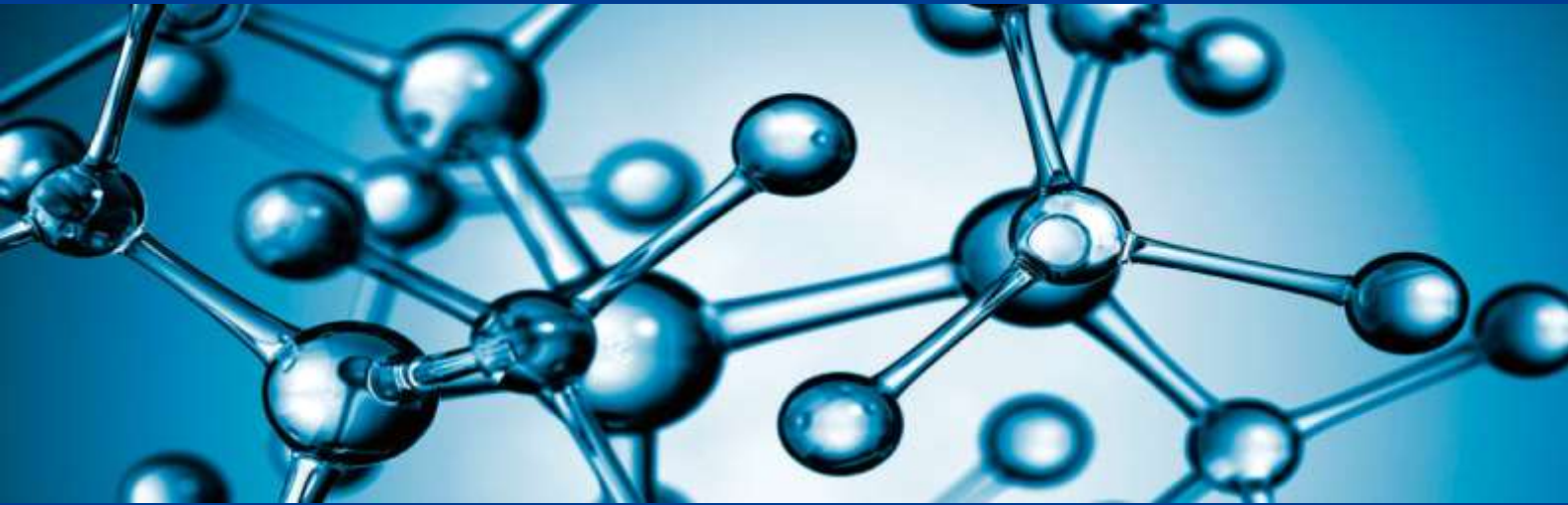


**INDIA'S ONLY COMPANY MANUFACTURING  
NANO CRYSTALLINE RIBBON**



Vikarsh Nano Technology  
& Alloys Pvt. Ltd.





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Nano crystalline ribbons are fruit of complex engineering techniques. Basically a suitable alloy is made with sophisticated metallurgy followed by rapid quenching with metal spinning technology with cooling rate more than one million degree centigrade.

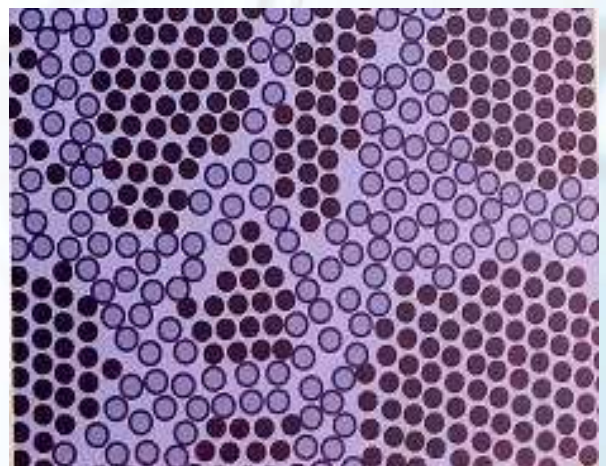


## NANO CRYSTALLINE TOROIDAL CORE PROPERTIES UPTO 1200 MM O.D.

### Properties and Features fo Nanocrystalline

Density	: 7.24 / 7.3 gms / cc
Average Filing Factor	: 80%
Permeability (min.)	: 1,50,000
Saturation Induction	: 1.25 T
Curie Temperature	: 560 deg C
Max Operating Temperature	: 150 deg C

## TYPICAL NANO CRYSTALLINE STRUCTURE





## COMPARISON OF DIFFERENT MAGNETIC MATERIALS :

PROPERTY	NANOCRYSTALLINE CORES	PERMALLOY CORES	SI-STEEL CORES	FERRITE
Saturate induction (T)	1.25	0.76	2.03	1.5~1.7
Initial permeability (0.8mA/cm)	40,000~80,000	> 80,000	1,000	≤ 15000
Maximum permeability	>250,000	> 200,000	40,000	20000
Density (g/cm <sup>3</sup> )	7.25	8.85	7.65	4.8
Curie temperature (°C)	560	400	740	≤ 200
Thickness (mm)	0.025 ~0.035	0.1	0.3	-
Stacking factor	≥ 0.75	0.9	0.95	-

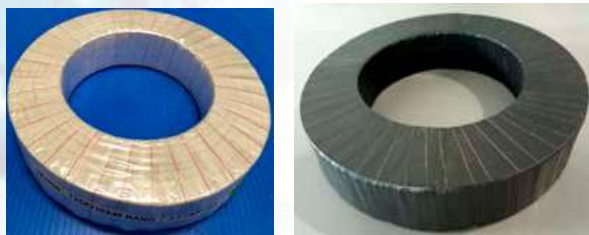


### Advantages of Nano Crystalline alloy cores :

- Lower material density :** Leads to light weight and size as compare to permalloy cores.
- High Permeability :** Minimized current measuring errors in CTs and works efficiently even at high frequencies.
- Excellent Thermal Stability :** Working temperature - 55~130°C
- Extremely Low Corecivity**
- Low Energy Losses**

### NANO CRYSTALLINE CORE SPECS

- ID : min.40 mm min.
- OD : max.1200 mm max.
- HT : As per customer specs
- Wall thickness : Min. 10 mm available in various shapes and geometries (oval, rectangular etc.)
- Gapped / cut cores options are available



### CORE HOUSING

Since nanocrystalline material is very thin and brittle cores cant be supplied in bare form but need good encapsulation which is available in following options :

- Stainless steel casing with PCB top cover (with electrical insulation tape/fiber glass tape/DMD tape)
- Epoxy hardened core with crape paper
- Moulded casing (Plastic/DMC- Options available for fixed sizes & bulk requirement) (with electrical insulation tape / fiber glass tape)

**For final core dimensions thickness of canopy should be considered, following is the general formula for same**

- Final ID : ID of bare core -7 mm
- Final OD : Od of bare core + 7 mm
- Final HT : HT of bare core +6 mm

(Applicable for 1 mm thick stainless steel upto maximum OD 350 mm)  
Above 350 mm -1.5 mm s.s. casing is applicable



\* We can also supply 0.2S class copper wound metering cores upto 765 KV class as per customer specification

NANO BH CURVE -1 / 2 / 3 SPECIFICATIONS			
OD (MM)	HT (MM)	$e = (OD-ID) / 2$ (MM)	CURVE
50 <= OD < 100	<= 30	8 <= e <= 30	NANO-1
100 <= OD < 250	>= 10	15 <= e <= 60	NANO-1
		10 <= e < 15	NANO-2
250 <= OD < 360	>= 10	15 <= e <= 60	NANO-1
		10 <= e < 15	NANO-2
360 <= OD < 450	>= 10	15 <= e <= 60	NANO-2
		10 <= e < 15	NANO-3
450 <= OD < 650	>= 20	20 <= e <= 60	NANO-3

GUARANTEED B-H VALUES FOR NANO RING CORES								
GAUSS	100	500	1000	2000	3000	4000	5000	7000
<b>REFERENCE CURVE</b>	<b>Maximum Limiting mA/cm</b>							
NANO-1	1	3.35	4.85	6.75	8.5	9.3	10.6	1
NANO-2	1.1	3.5	5	7.1	8.6	9.75	11.3	20.1
NANO-3	1.4	4.6	6.8	9.7	11.5	13.65	16.3	25



**Vikarsh Nano Technology & Alloys Pvt. Ltd.**

Office: Office No. 2, Uttekar Heights, 572, Shaniwar Peth, Kelkar Road, Opp. Kesari Wada, Pune - 411030, Maharashtra, INDIA.

Ph No: +91 - 20 - 24452797 / 24468999

Works : Gat No. 273 & 274, A/P. Dhangarwadi, (Shirwal) NH-4, Tal. Khandala, Dist. Satara- 412 801, Maharashtra, INDIA.

email : [vikarshnano@gmail.com](mailto:vikarshnano@gmail.com)

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