

## GUK Magnetics NdFeB Grade System



This document provides magnetic, physical and mechanical data of all the Neodymium magnets GUK Magnetics sells and which are relevant for the selection of magnets and design of magnetic systems.

Grade Quality Code	Coercivity Description	Maximum Operating Temperature
<a href="#">N</a>	Normal coercivity	80°C
<a href="#">M</a>	Medium coercivity	100°C
<a href="#">H</a>	High coercivity	120°C
<a href="#">SH</a>	Super-High coercivity	150°C
<a href="#">UH</a>	Ultra-High coercivity	180°C
<a href="#">EH</a>	Extremely High coercivity	200°C
<a href="#">AH</a>	Absolutely High coercivity	220°C
<a href="#">VH</a>	Virtually High coercivity	250°C

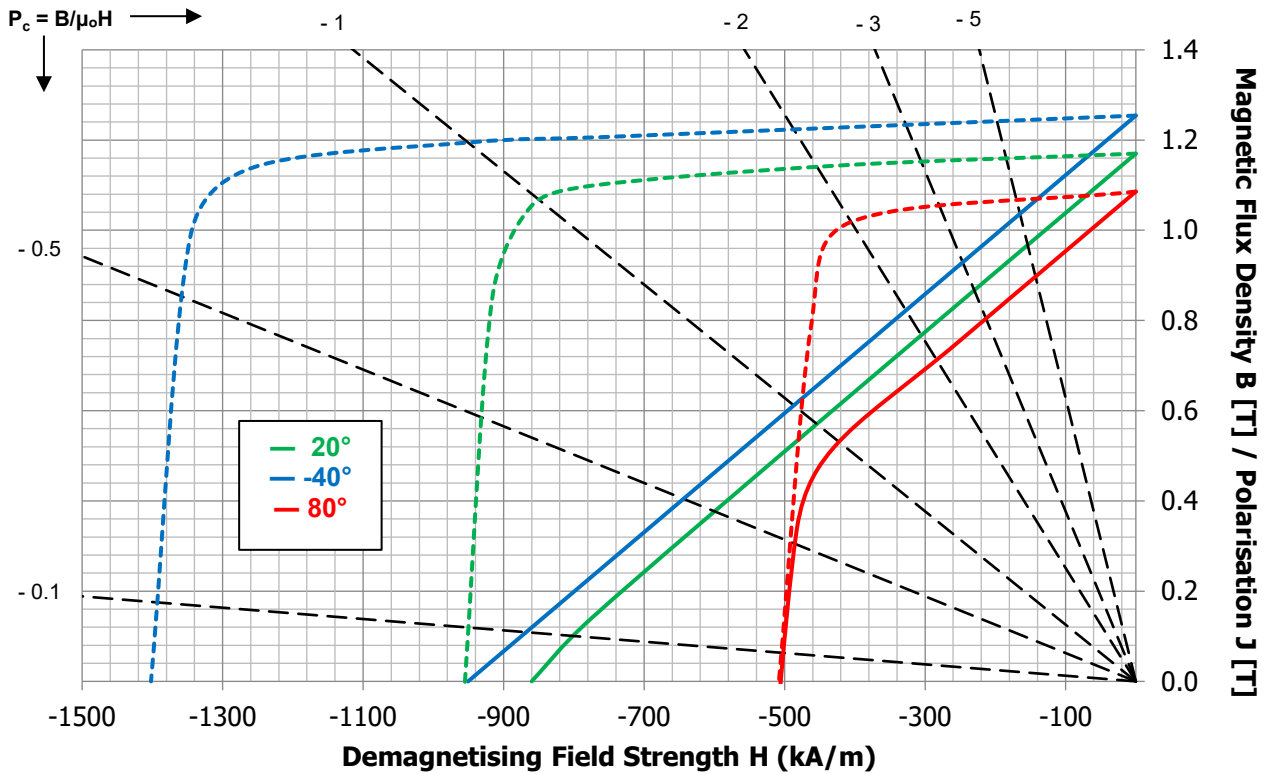
## N- Grades

GUK Magnetics Grade Code	Remanence $B_r$	Normal Coercivity $H_{cB}$	Intrinsic Coercivity $H_{cJ}$	Maximum Energy Product $(BH)_{max}$	Remanence Temperature Coefficient $\alpha(B_r)$	Intrinsic Coercivity Temperature Coefficient $\beta(H_{cJ})$	Maximum Operating Temperature $T_{max}$
	Minimum Value	Minimum Value	Minimum Value	Minimum Value	Minimum Typical value	Minimum Typical Value	Maximum Value
	[mT]	[kA/m]	[kA/m]	[kJ/m <sup>3</sup> ]	[%/°C]	[%/°C]	[°C]
<a href="#">N35</a>	1170	860	955	259	-0.12	-0.78	80
<a href="#">N38</a>	1220	860	955	281	-0.12	-0.78	80
<a href="#">N40</a>	1250	860	955	300	-0.12	-0.78	80
<a href="#">N42</a>	1280	860	955	318	-0.12	-0.78	80
<a href="#">N45</a>	1320	860	955	338	-0.12	-0.78	80
<a href="#">N48</a>	1370	836	955	358	-0.12	-0.78	80
<a href="#">N50</a>	1390	836	955	376	-0.12	-0.78	80
<a href="#">N52</a>	1420	836	876	390	-0.12	-0.78	80
<a href="#">N54</a>	1440	836	875	406	-0.12	-0.78	70
<a href="#">N55</a>	1460	716	876	414	-0.12	-0.62	80

These are the most common grades. Please contact us for questions on other grades available at GUK Magnetics.

# Technical Datasheet: Neodymium N35 – Anisotropic Sintered

## Demagnetisation Curve N35



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

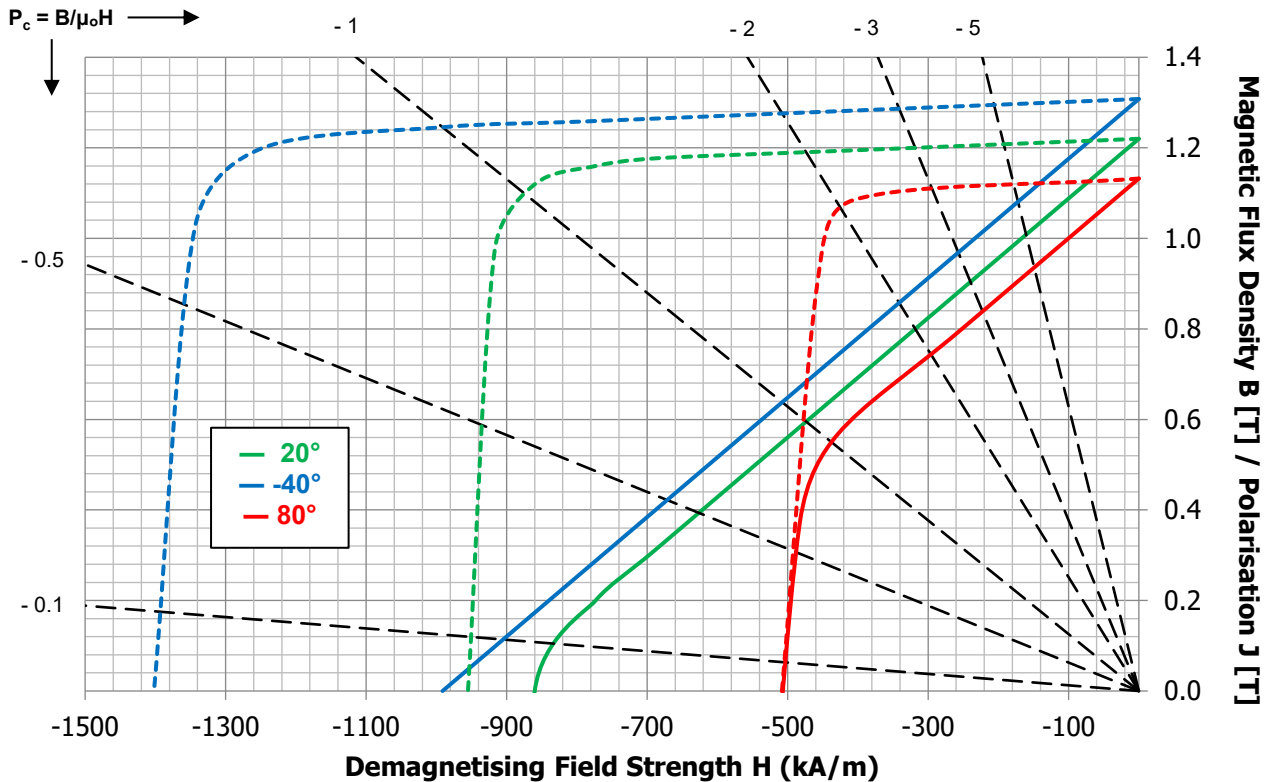
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.17	T
<b>H<sub>cB</sub></b>	min	860	kA/m
<b>H<sub>cJ</sub></b>	min	955	kA/m
<b>(BH)<sub>ma</sub></b>	min	259	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.78	%/°C
<b>T<sub>max</sub></b>		80	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N38 – Anisotropic Sintered

## Demagnetisation Curve N38



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

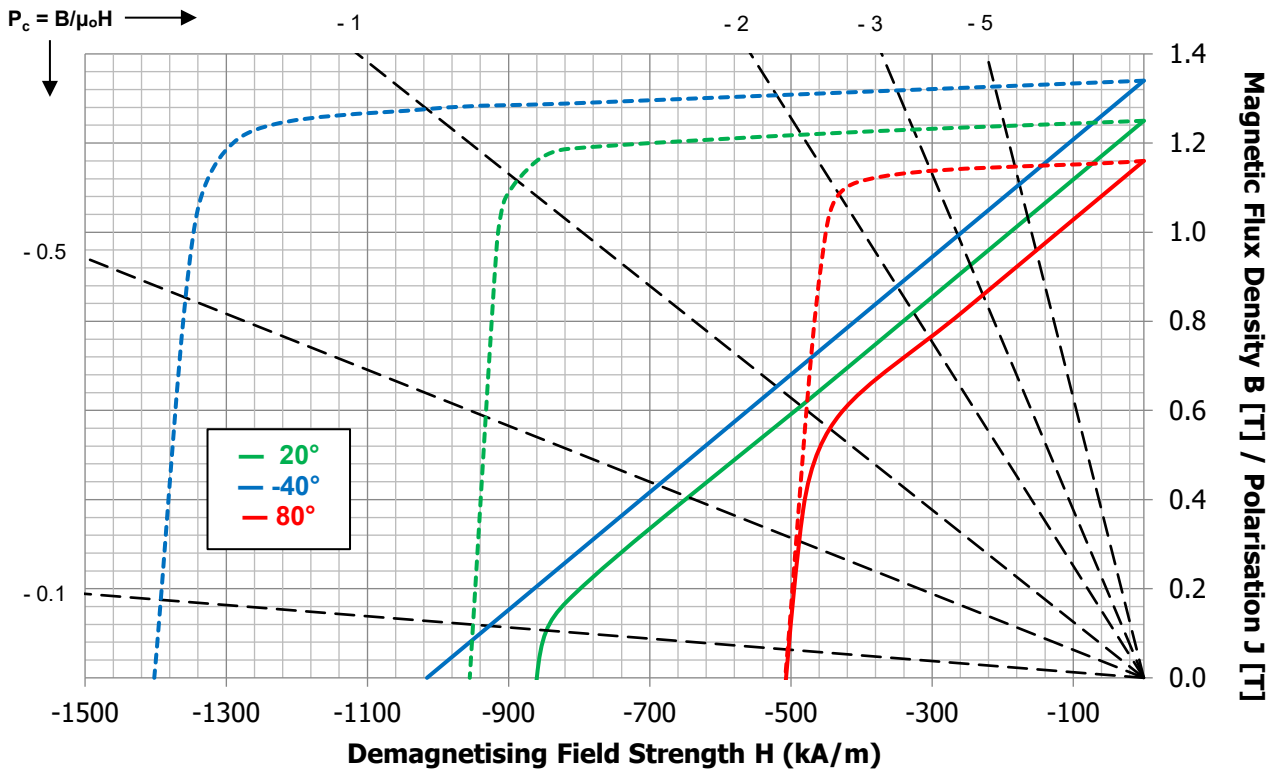
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.22	T
<b>H<sub>cB</sub></b>	min	860	kA/m
<b>H<sub>cJ</sub></b>	min	955	kA/m
<b>(BH)<sub>ma</sub></b>	min	281	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.78	%/°C
<b>T<sub>max</sub></b>		80	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C		
Density	typ	7400 - 7800 kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700 HV
Modulus of Elasticity / Young's modulus	typ	140 - 200 GPa
Flexural / bending strength	typ	100 - 400 MPa
Compressive strength	typ	600 - 1100 MPa
Tensile strength / ultimate strength	typ	74 - 90 MPa
Electrical resistivity	typ	1.1 - 1.7 μΩm
Specific heat capacity	typ	350 - 550 J/(kg K)
Thermal conductivity	typ	5 - 15 W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9 10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0 10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N40 – Anisotropic Sintered

## Demagnetisation Curve N40



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

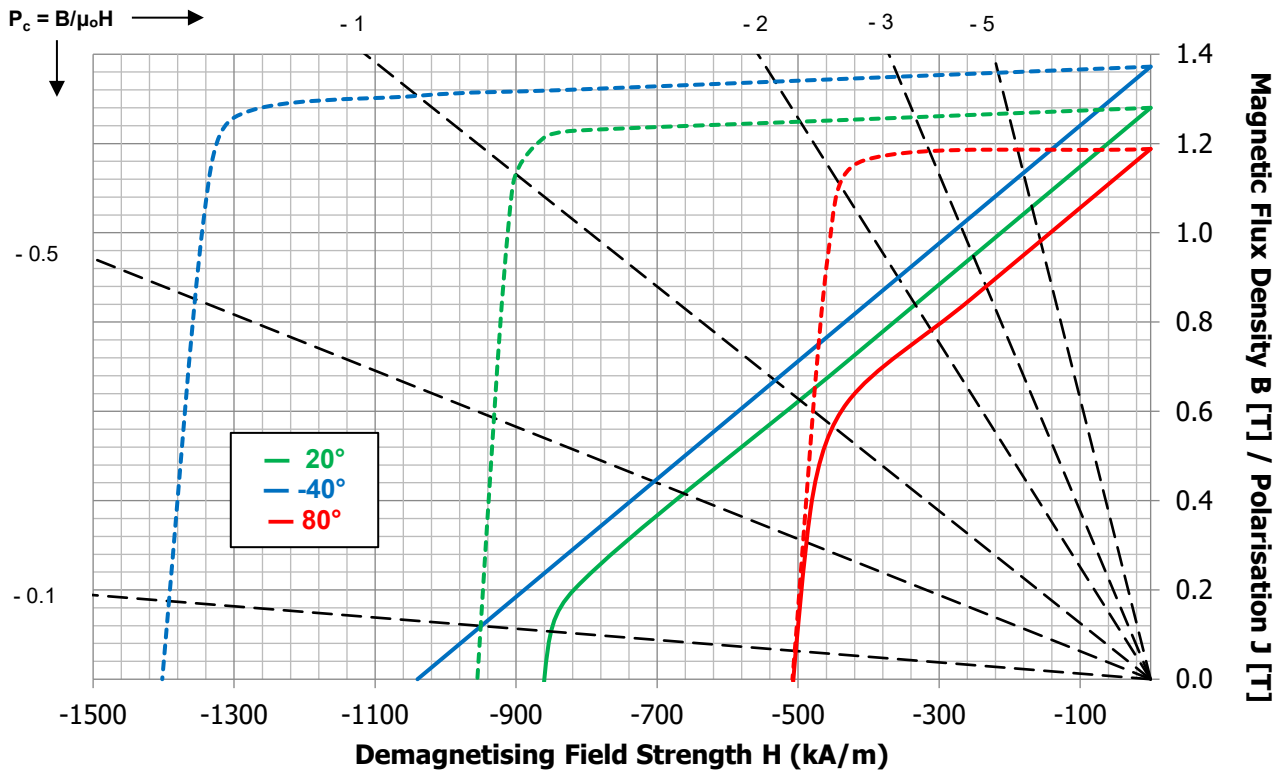
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.25	T
<b>H<sub>cB</sub></b>	min	860	kA/m
<b>H<sub>cJ</sub></b>	min	955	kA/m
<b>(BH)<sub>ma</sub></b>	min	300	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.78	%/°C
<b>T<sub>max</sub></b>		80	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N42 – Anisotropic Sintered

## Demagnetisation Curve N42



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

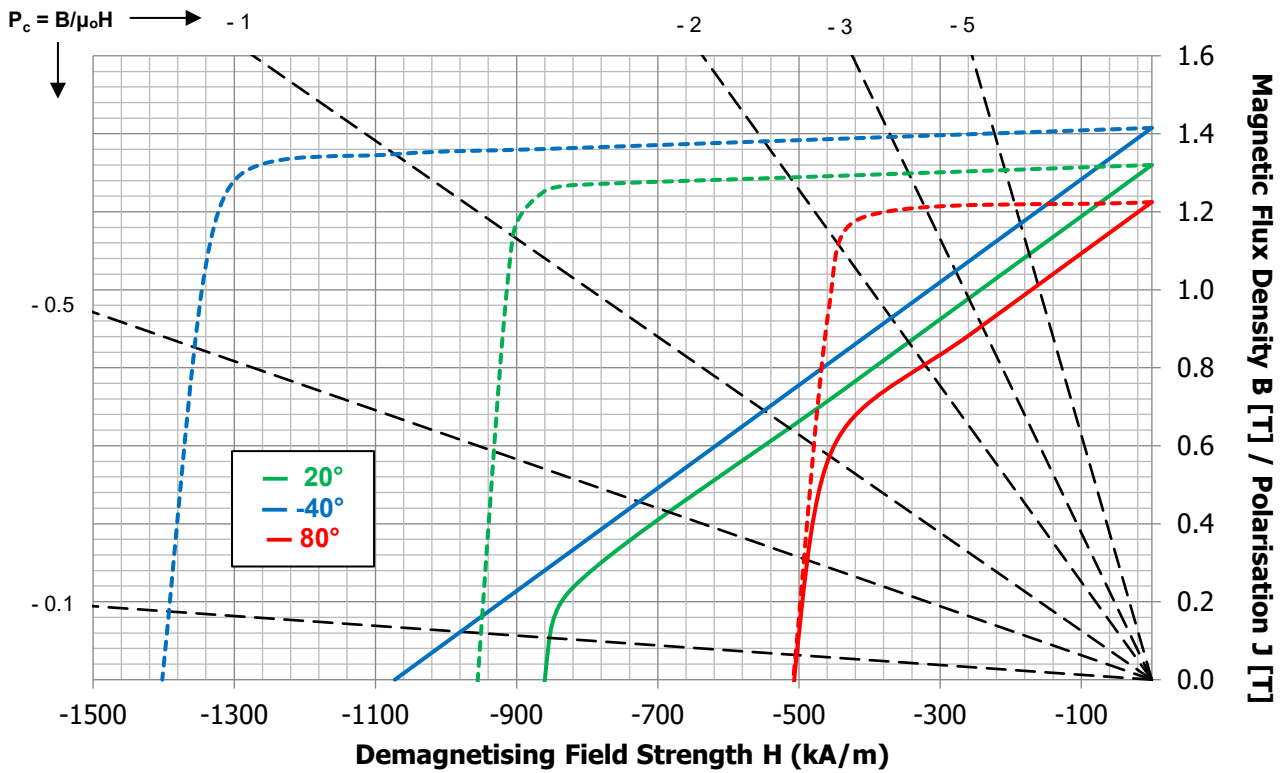
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.28	T
<b>H<sub>cB</sub></b>	min	860	kA/m
<b>H<sub>cJ</sub></b>	min	955	kA/m
<b>(BH)<sub>ma</sub></b>	min	318	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.78	%/°C
<b>T<sub>max</sub></b>		80	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N45 – Anisotropic Sintered

## Demagnetisation Curve N45



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

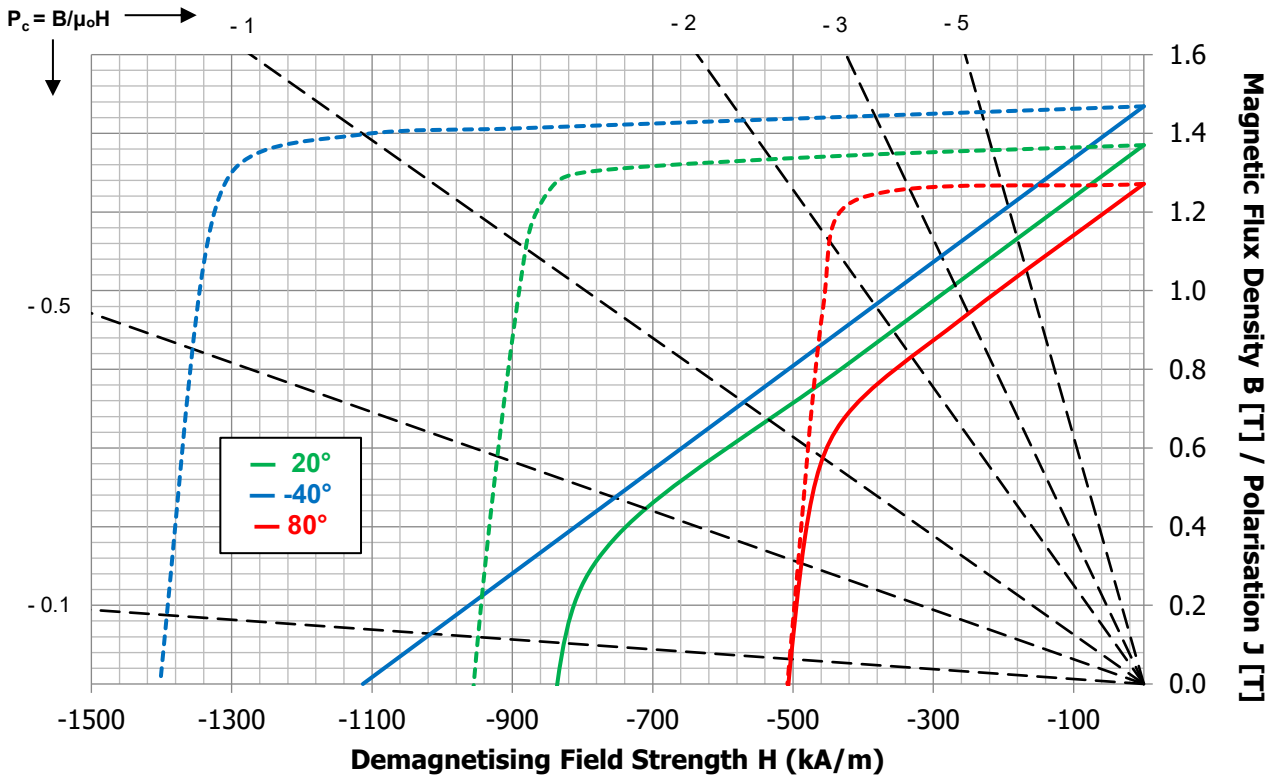
Magnetic Properties @20°C			
$B_r$	min	1.32	T
$H_{cB}$	min	860	kA/m
$H_{cJ}$	min	955	kA/m
$(BH)_{ma}$	min	338	$\text{kJ/m}^3$
$\alpha(B_r)$	min typ	-0.12	%/°C
$\beta(H_{cJ})$	min typ	-0.78	%/°C
$T_{max}$		80	°C
$\mu_r$	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	$\text{kg/m}^3$
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	$\mu\Omega\text{m}$
Specific heat capacity	typ	350 - 550	$\text{J}/(\text{kg K})$
Thermal conductivity	typ	5 - 15	$\text{W}/(\text{m K})$
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	$10^{-6}/\text{K}$
Coefficient of linear thermal expansion, $\perp$ DOM*	typ	-3 - 0	$10^{-6}/\text{K}$

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N48 – Anisotropic Sintered

## Demagnetisation Curve N48



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

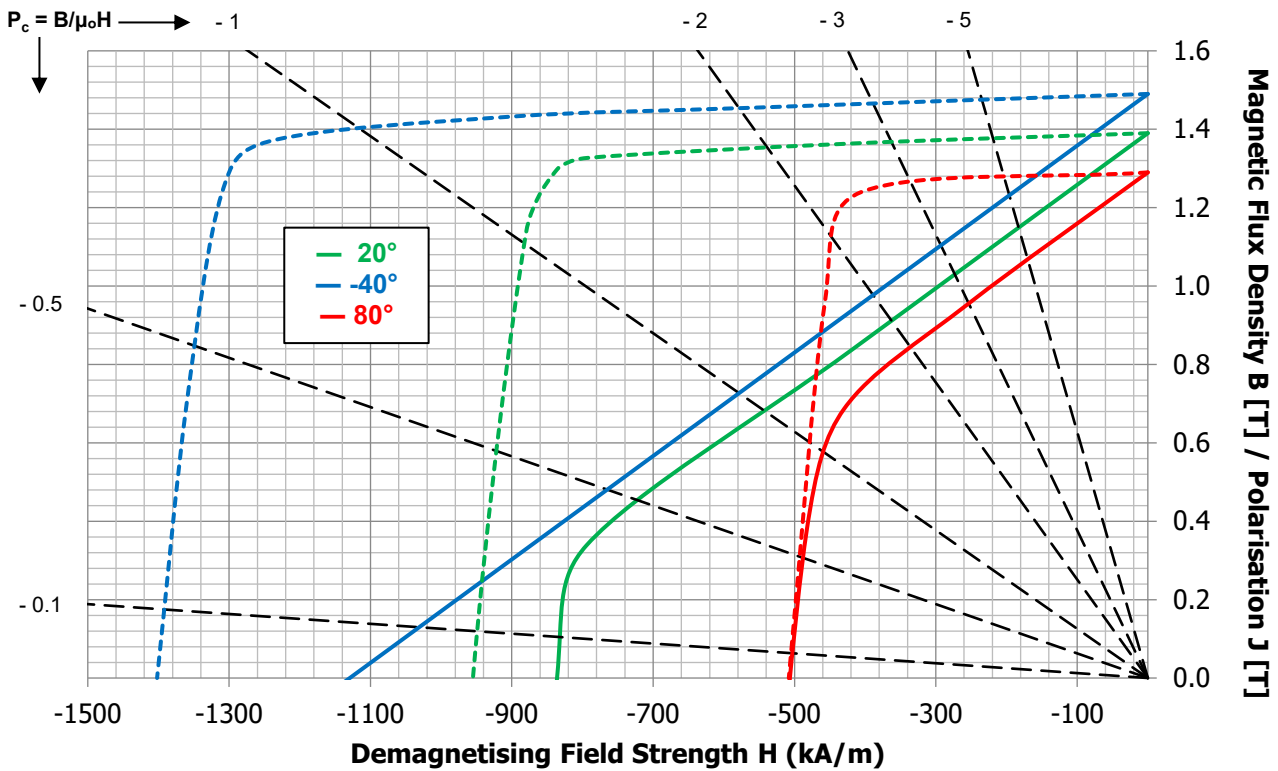
Magnetic properties @20°C			
<b>B<sub>r</sub></b>	min	1.37	T
<b>H<sub>cb</sub></b>	min	836	kA/m
<b>H<sub>cj</sub></b>	min	955	kA/m
<b>(BH)<sub>ma</sub></b>	min	358	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cj</sub>)</b>	min typ	-0.78	%/°C
<b>T<sub>max</sub></b>		80	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N50 – Anisotropic Sintered

## Demagnetisation Curve N50



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

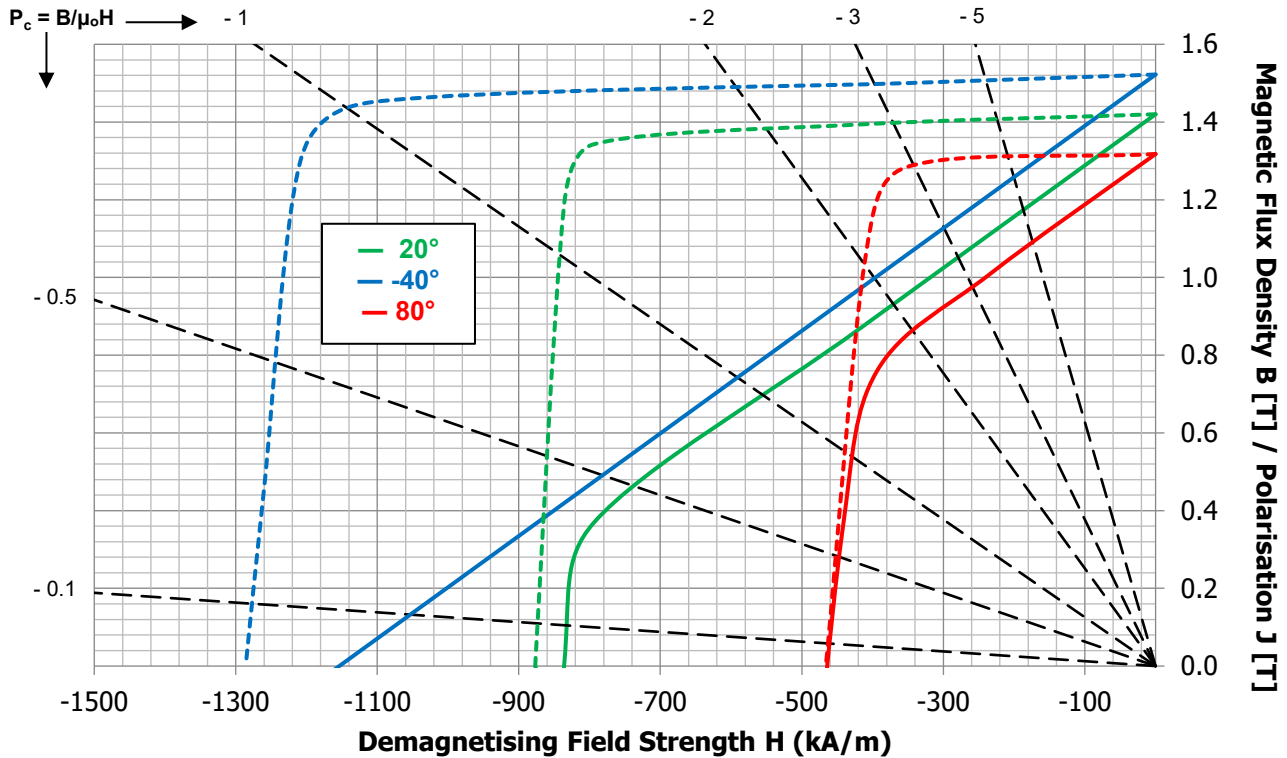
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.39	T
<b>H<sub>cb</sub></b>	min	836	kA/m
<b>H<sub>cj</sub></b>	min	955	kA/m
<b>(BH)<sub>ma</sub></b>	min	376	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cj</sub>)</b>	min typ	-0.78	%/°C
<b>T<sub>max</sub></b>		80	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N52 – Anisotropic Sintered

## Demagnetisation Curve N52



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

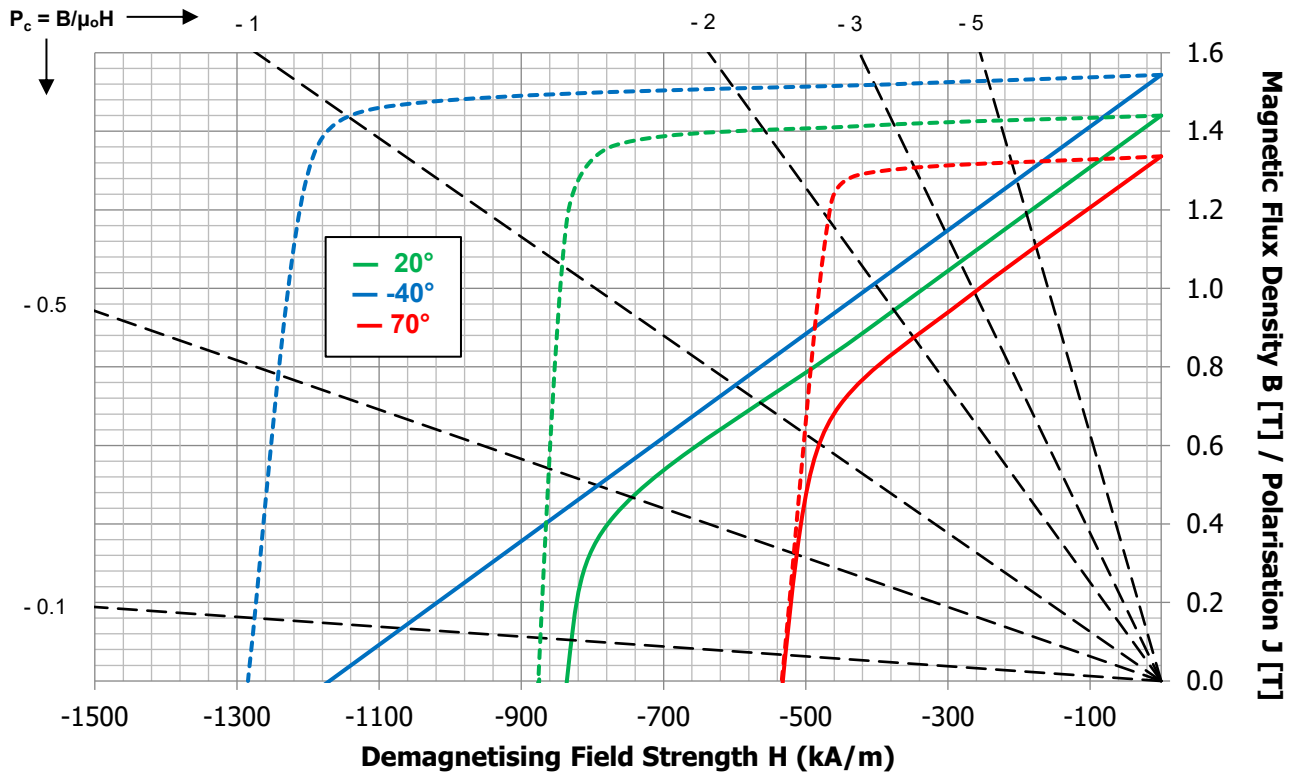
Magnetic Properties @20°C			
$B_r$	min	1.42	T
$H_{cB}$	min	836	kA/m
$H_{cJ}$	min	876	kA/m
$(BH)_{ma}$	min	390	$\text{kJ/m}^3$
$\alpha(B_r)$	min typ	-0.12	%/°C
$\beta(H_{cJ})$	min typ	-0.78	%/°C
$T_{max}$		80	°C
$\mu_r$	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	$\text{kg/m}^3$
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	$\mu\Omega\text{m}$
Specific heat capacity	typ	350 - 550	$\text{J}/(\text{kg K})$
Thermal conductivity	typ	5 - 15	$\text{W}/(\text{m K})$
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	$10^{-6}/\text{K}$
Coefficient of linear thermal expansion, $\perp$ DOM*	typ	-3 - 0	$10^{-6}/\text{K}$

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N54 – Anisotropic Sintered

## Demagnetisation Curve N54



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

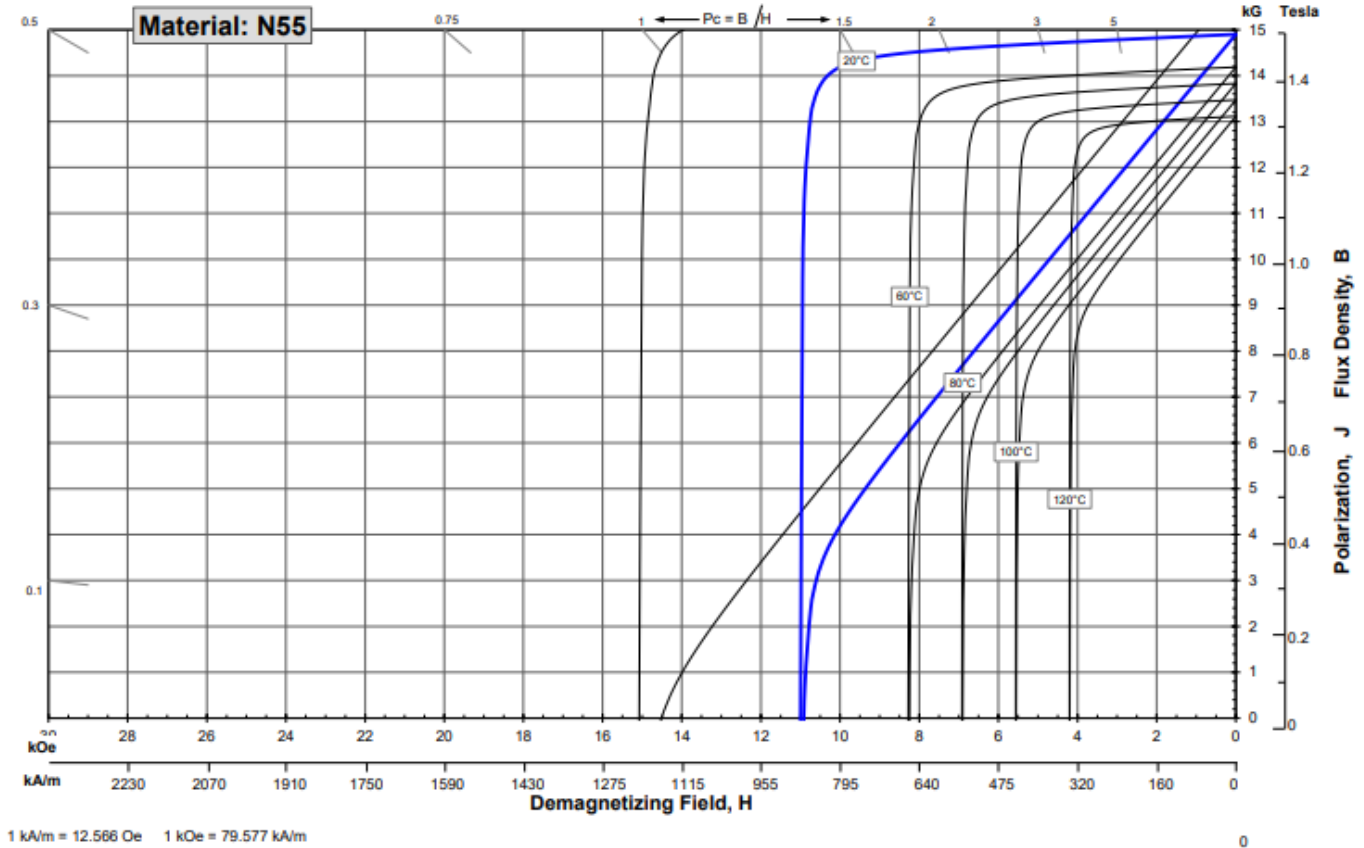
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.44	T
<b>H<sub>cB</sub></b>	min	836	kA/m
<b>H<sub>cJ</sub></b>	min	875	kA/m
<b>(BH)<sub>ma</sub></b>	min	406	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.78	%/°C
<b>T<sub>max</sub></b>		70	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N55 – Anisotropic Sintered

## Demagnetisation Curve N55



The material data and demagnetization curves shown above represent typical properties that may vary due to product shape and size. Demagnetisation curves show nominal Br and minimum Hci. On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

Magnetic Properties @20°C			
<b>Br</b>	min	1460	mT
<b>HcB</b>	min	716	kA/m
<b>HcJ</b>	min	876	kA/m
<b>(BH)ma</b>	min	414	kJ/m <sup>3</sup>
<b>α(Br)</b>	min typ	-0.12	%/°C
<b>β(HcJ)</b>	min typ	-0.62	%/°C
<b>Tmax</b>		80	°C

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

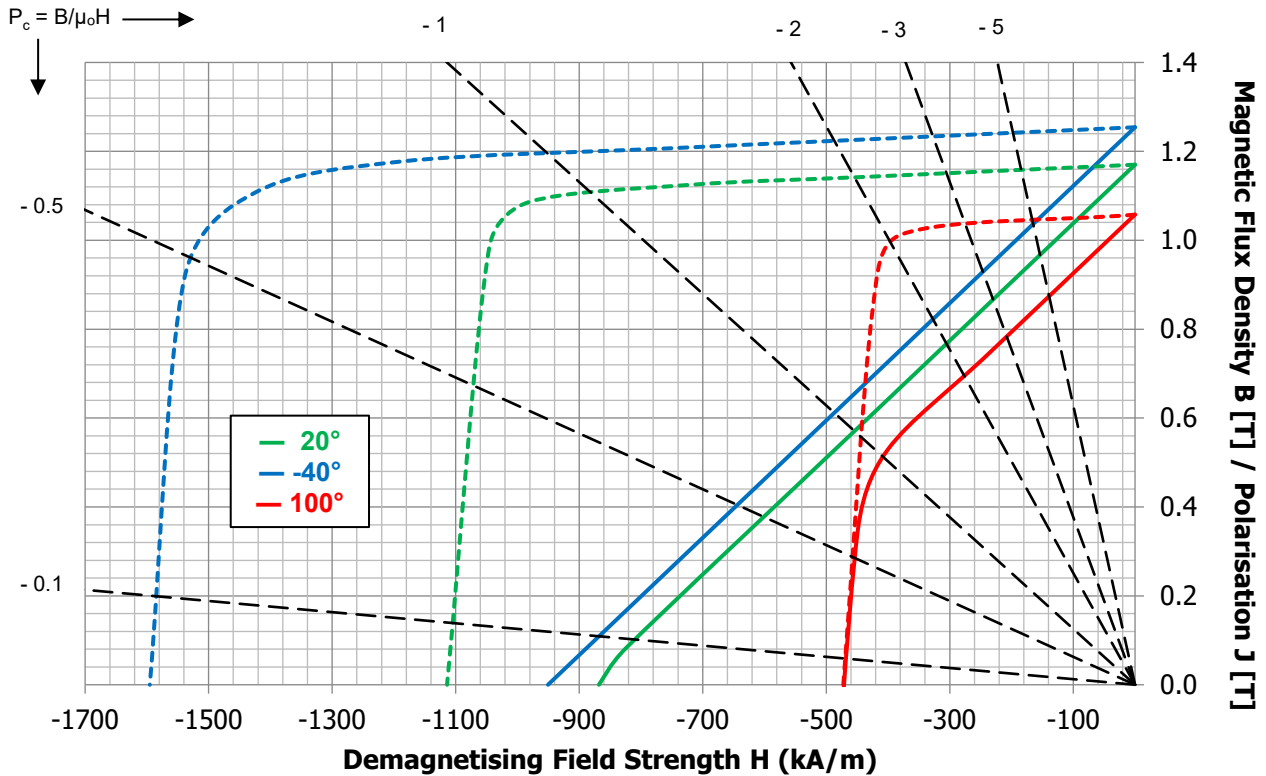
## M- Grades

GUK Magnetics Grade Code	Remanence $B_r$	Normal Coercivity $H_{cB}$	Intrinsic Coercivity $H_{cJ}$	Maximum Energy Product $(BH)_{max}$	Remanence Temperature Coefficient $\alpha(B_r)$	Intrinsic Coercivity Temperature Coefficient $\beta(H_{cJ})$	Maximum Operating Temperature $T_{max}$
	Minimum Value	Minimum Value	Minimum Value	Minimum Value	Minimum Typical Value	Minimum Typical Value	Maximum Value
	[mT]	[kA/m]	[kA/m]	[kJ/m <sup>3</sup> ]	[%/°C]	[%/°C]	[°C]
<a href="#">N35M</a>	1170	868	1114	259	-0.12	-0.72	100
<a href="#">N38M</a>	1220	899	1114	281	-0.12	-0.72	100
<a href="#">N40M</a>	1250	923	1114	300	-0.12	-0.72	100
<a href="#">N42M</a>	1280	955	1114	318	-0.12	-0.72	100
<a href="#">N45M</a>	1320	971	1114	338	-0.12	-0.72	100
<a href="#">N48M</a>	1360	995	1114	358	-0.12	-0.72	100
<a href="#">N50M</a>	1390	1035	1114	376	-0.12	-0.72	100
<a href="#">N52M</a>	1420	1056	1114	390	-0.12	-0.72	100

These are the most common grades. Please contact us for questions on other grades available at GUK Magnetics.

# Technical Datasheet: Neodymium N35M – Anisotropic Sintered

## Demagnetisation Curve N35M



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

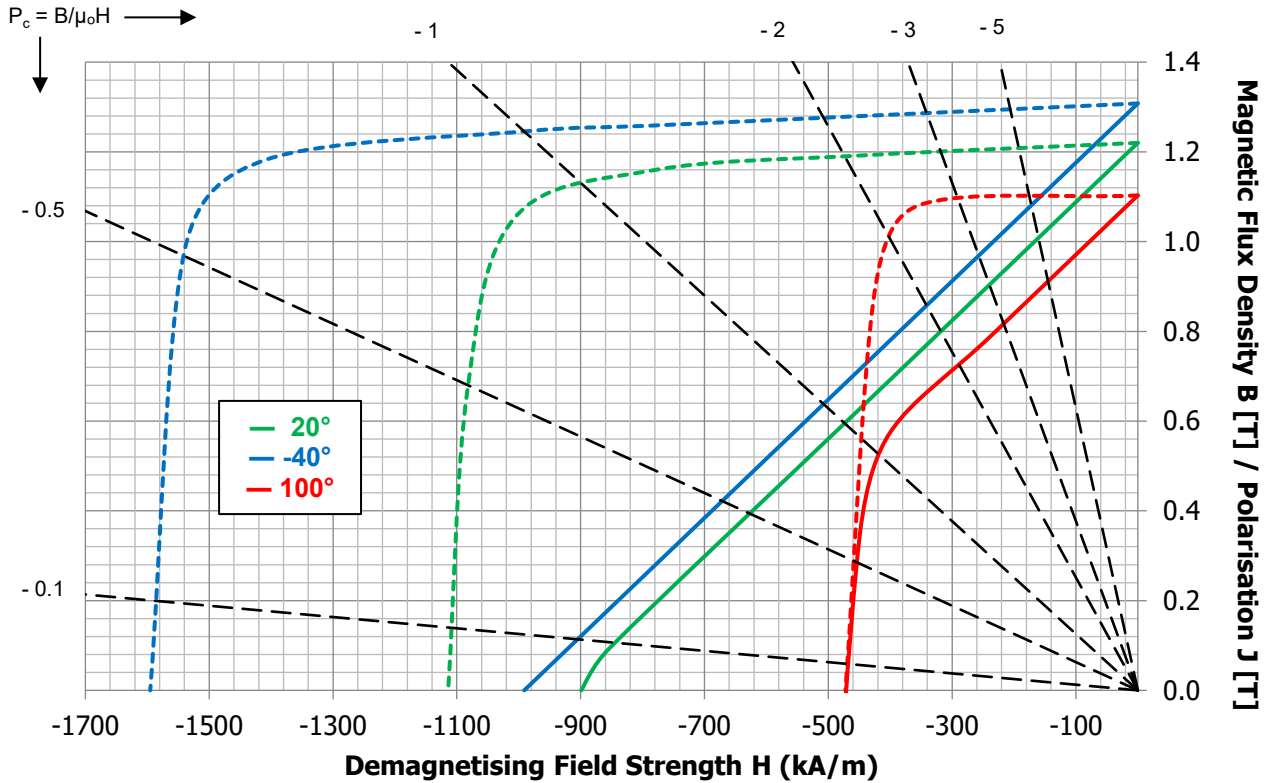
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.17	T
<b>H<sub>cB</sub></b>	min	868	kA/m
<b>H<sub>cJ</sub></b>	min	1114	kA/m
<b>(BH)<sub>ma</sub></b>	min	259	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.72	%/°C
<b>T<sub>max</sub></b>		100	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N38M – Anisotropic Sintered

## Demagnetisation Curve N38M



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

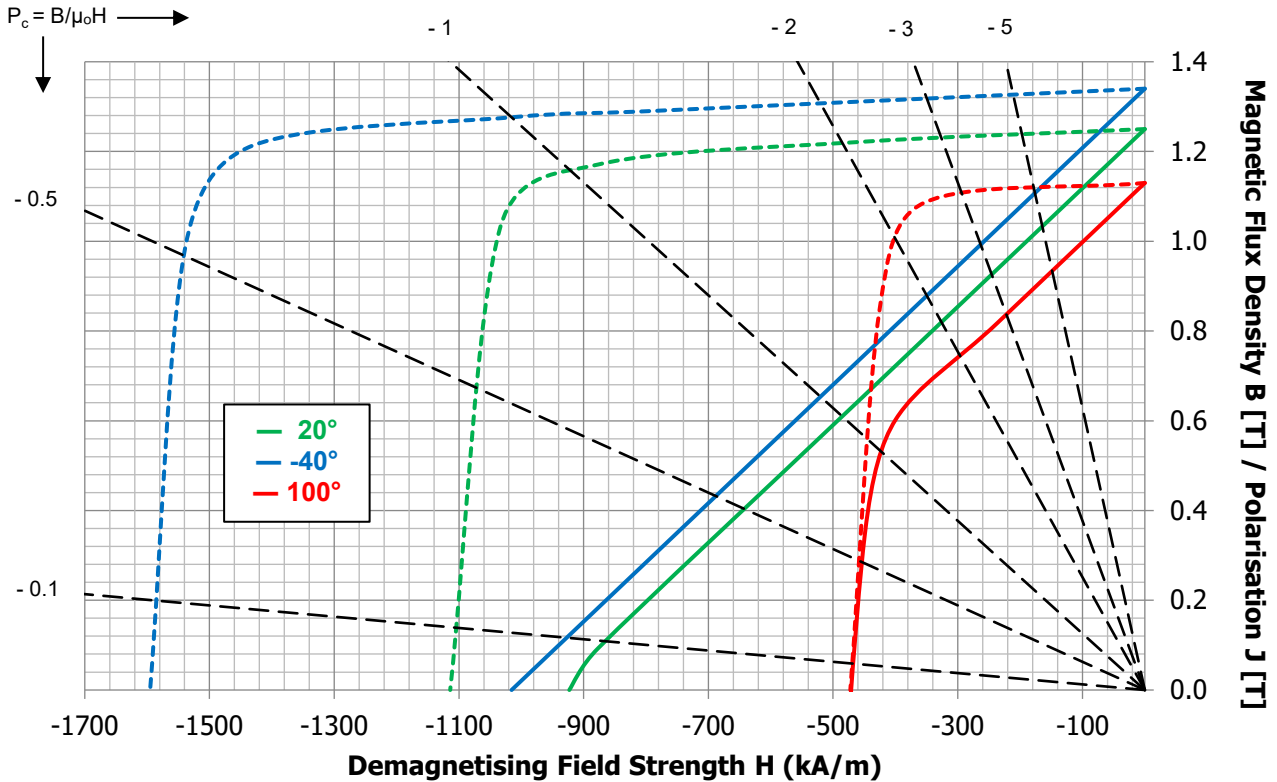
Magnetic properties @20°C			
<b>B<sub>r</sub></b>	min	1.22	T
<b>H<sub>cB</sub></b>	min	899	kA/m
<b>H<sub>cJ</sub></b>	min	1114	kA/m
<b>(BH)<sub>ma</sub></b>	min	281	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.72	%/°C
<b>T<sub>max</sub></b>		100	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N40M – Anisotropic Sintered

## Demagnetisation Curve N40M



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

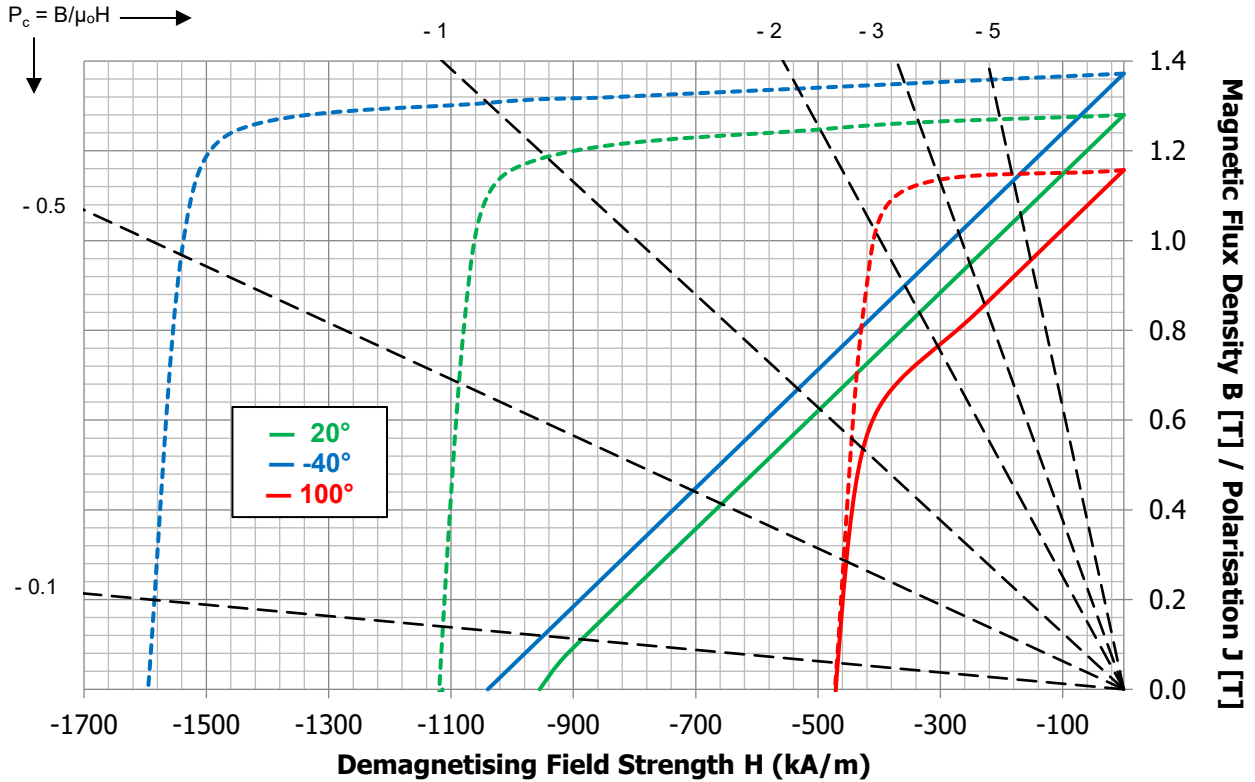
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.25	T
<b>H<sub>cB</sub></b>	min	923	kA/m
<b>H<sub>cJ</sub></b>	min	1114	kA/m
<b>(BH)<sub>ma</sub></b>	min	300	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.72	%/°C
<b>T<sub>max</sub></b>		100	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N42M – Anisotropic Sintered

## Demagnetisation Curve N42M



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

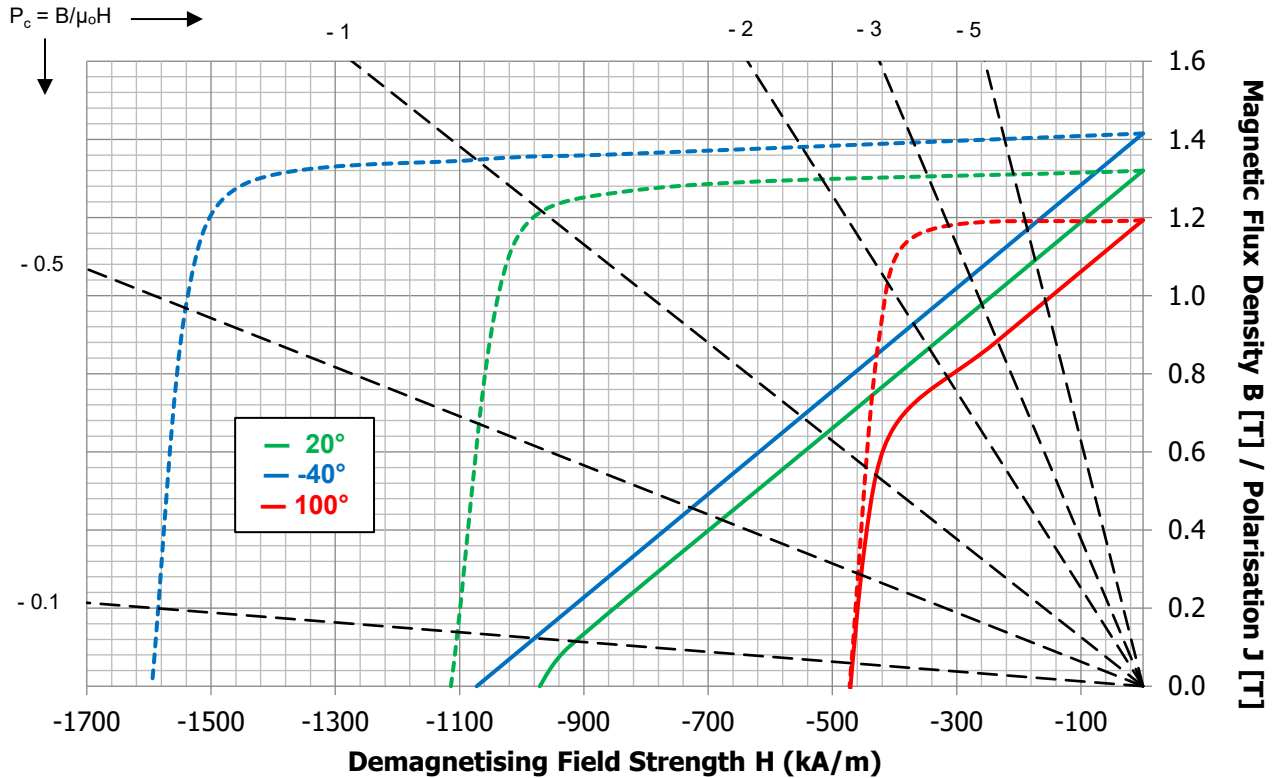
Magnetic Properties @20°C			
$B_r$	min	1.28	T
$H_{cB}$	min	955	kA/m
$H_{cJ}$	min	1114	kA/m
$(BH)_{ma}$	min	318	$\text{kJ/m}^3$
$\alpha(B_r)$	min typ	-0.12	%/°C
$\beta(H_{cJ})$	min typ	-0.72	%/°C
$T_{max}$		100	°C
$\mu_r$	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	$\text{kg/m}^3$
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	$\mu\Omega\text{m}$
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	$\frac{\text{W}}{\text{m} \cdot \text{K}}$
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	$10^{-6}/\text{K}$
Coefficient of linear thermal expansion, $\perp$ DOM*	typ	-3 - 0	$10^{-6}/\text{K}$

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N45M – Anisotropic Sintered

## Demagnetisation Curve N45M



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

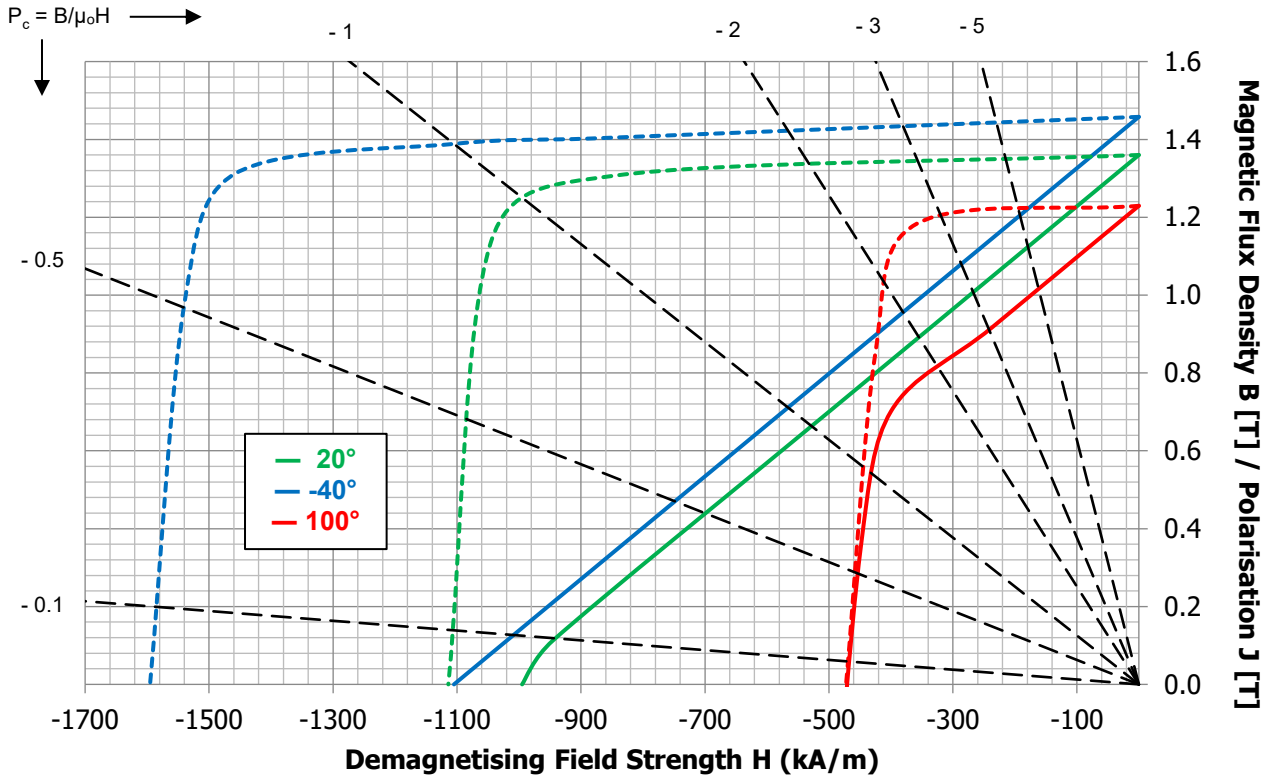
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.32	T
<b>H<sub>cB</sub></b>	min	971	kA/m
<b>H<sub>cJ</sub></b>	min	1114	kA/m
<b>(BH)<sub>ma</sub></b>	min	338	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.72	%/°C
<b>T<sub>max</sub></b>		100	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N48M – Anisotropic Sintered

## Demagnetisation Curve N48M



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

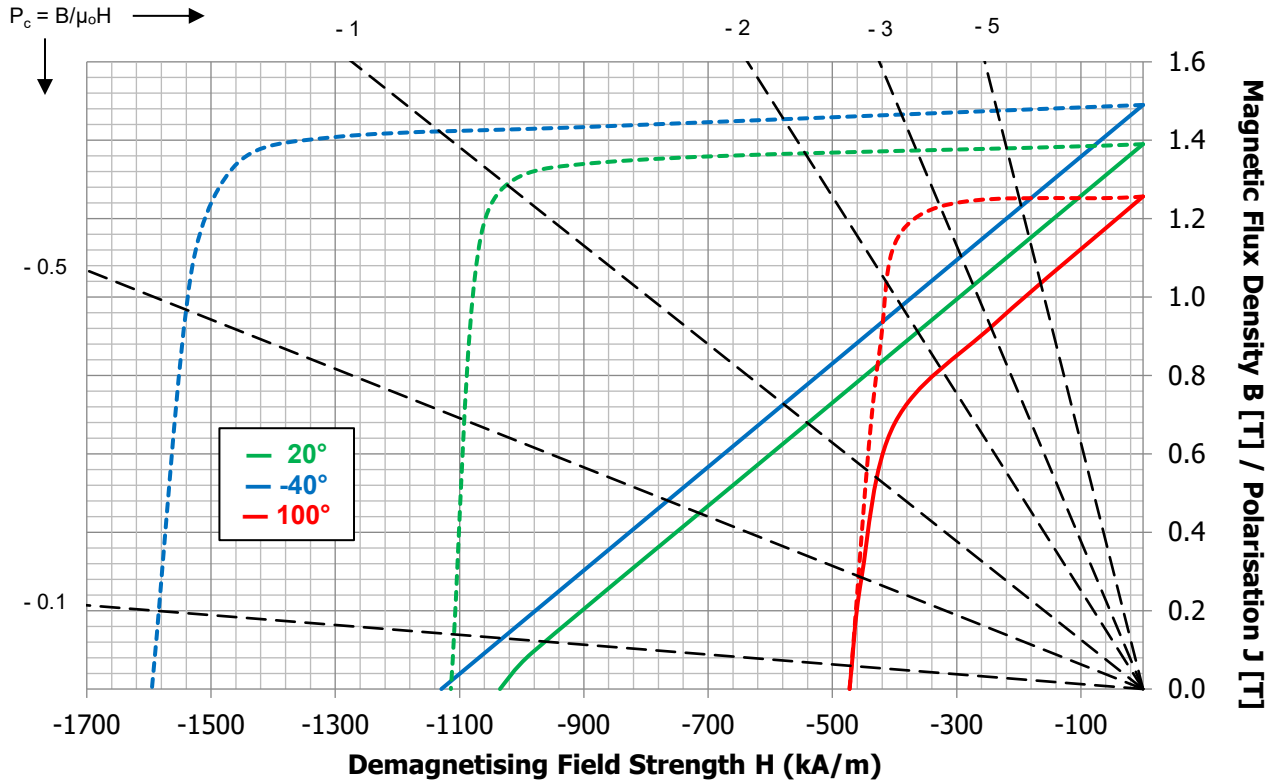
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.36	T
<b>H<sub>cB</sub></b>	min	995	kA/m
<b>H<sub>cJ</sub></b>	min	1114	kA/m
<b>(BH)<sub>ma</sub></b>	min	358	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.72	%/°C
<b>T<sub>max</sub></b>		100	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N50M – Anisotropic Sintered

## Demagnetisation Curve N50M



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

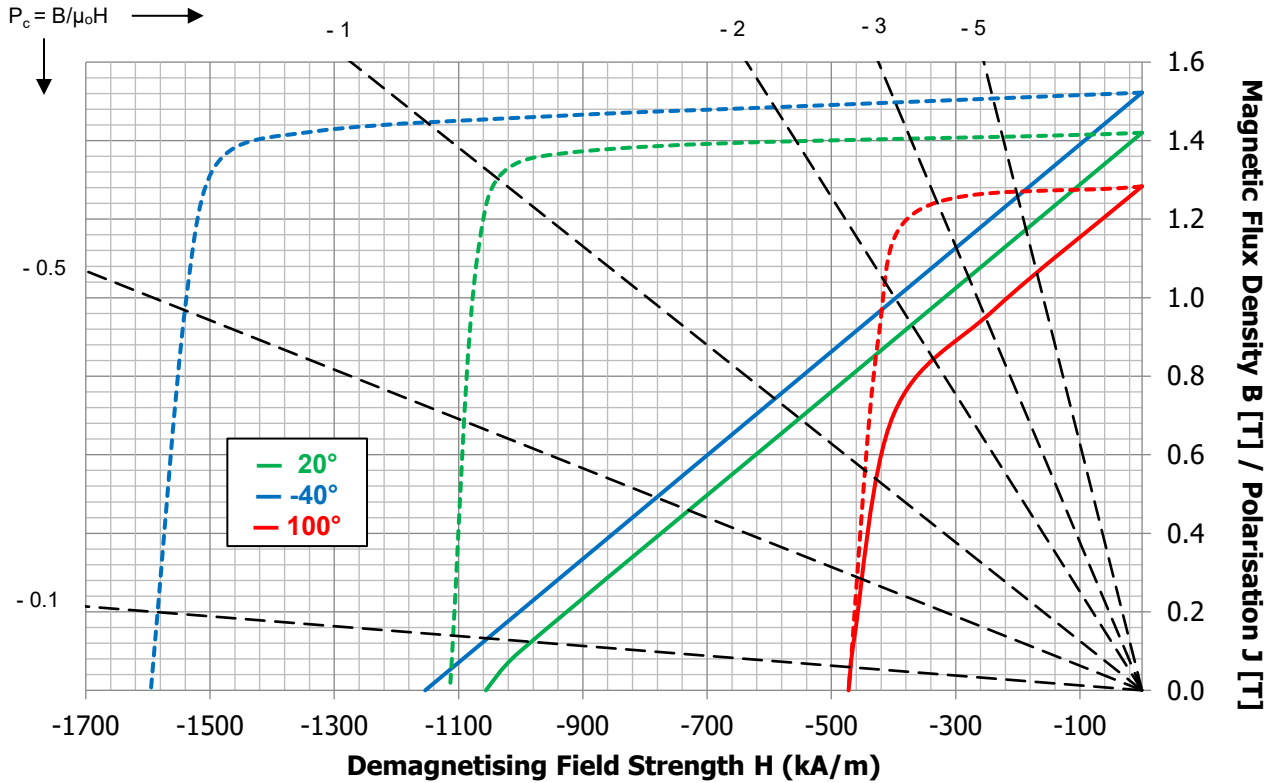
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.39	T
<b>H<sub>cB</sub></b>	min	1035	kA/m
<b>H<sub>cJ</sub></b>	min	1114	kA/m
<b>(BH)<sub>ma</sub></b>	min	376	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.72	%/°C
<b>T<sub>max</sub></b>		100	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N52M – Anisotropic Sintered

## Demagnetisation Curve N52M



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.42	T
<b>H<sub>cB</sub></b>	min	1056	kA/m
<b>H<sub>cJ</sub></b>	min	1114	kA/m
<b>(BH)<sub>ma</sub></b>	min	390	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.72	%/°C
<b>T<sub>max</sub></b>		100	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

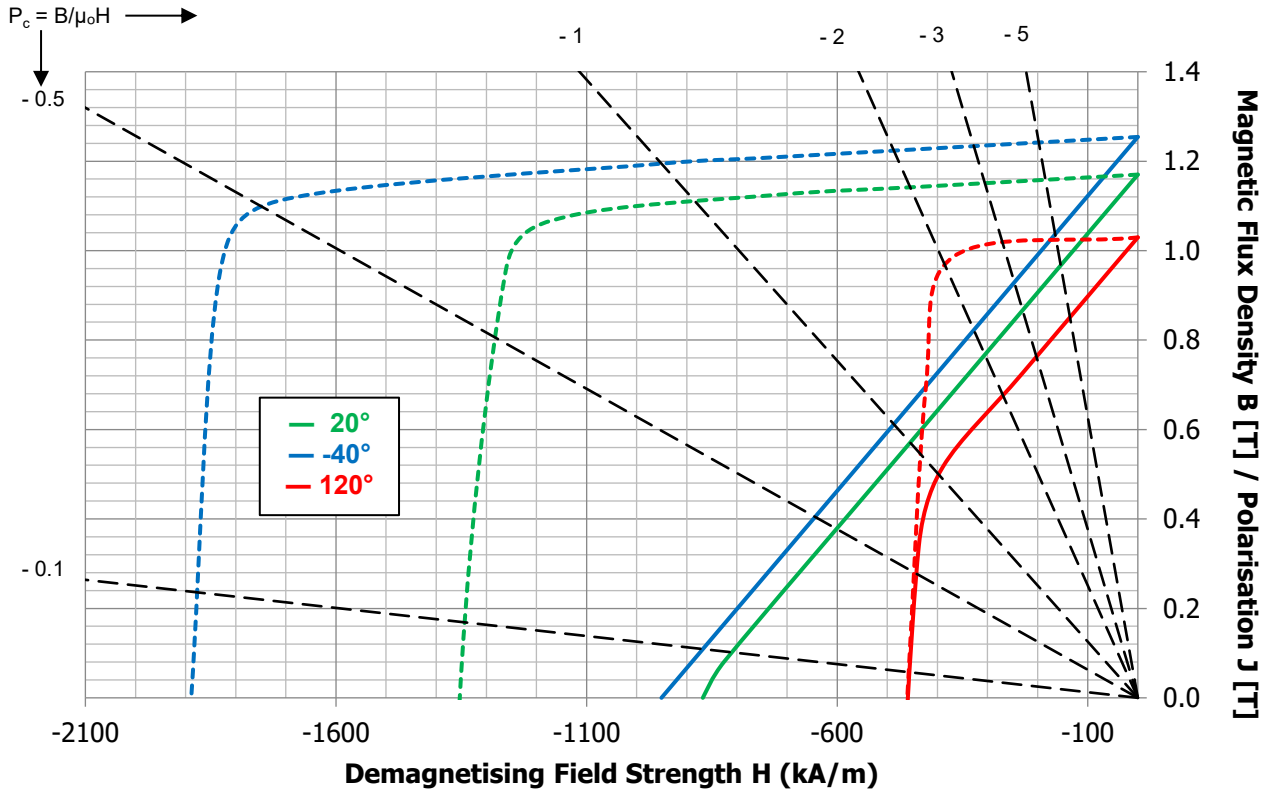
## H- Grades

GUK Magnetics Grade Code	Remanence $B_r$	Normal Coercivity $H_{cB}$	Intrinsic Coercivity $H_{cJ}$	Maximum Energy Product $(BH)_{max}$	Remanence Temperature Coefficient $\alpha(B_r)$	Intrinsic Coercivity Temperature Coefficient $\beta(H_{cJ})$	Maximum Operating Temperature $T_{max}$
	Minimum Value	Minimum Value	Minimum Value	Minimum Value	Minimum Typical Value	Minimum Typical Value	Maximum Value
	[mT]	[kA/m]	[kA/m]	[kJ/m <sup>3</sup> ]	[%/°C]	[%/°C]	[°C]
<a href="#">N35H</a>	1170	868	1353	259	-0.12	-0.66	120
<a href="#">N38H</a>	1220	899	1353	281	-0.12	-0.66	120
<a href="#">N40H</a>	1250	923	1353	300	-0.12	-0.66	120
<a href="#">N42H</a>	1280	955	1353	318	-0.12	-0.66	120
<a href="#">N45H</a>	1320	971	1353	333	-0.12	-0.66	120
<a href="#">N48H</a>	1360	1011	1353	358	-0.12	-0.66	120
<a href="#">N50H</a>	1390	1035	1353	374	-0.12	-0.66	120
<a href="#">N52H</a>	1420	1035	1353	390	-0.12	-0.66	120

These are the most common grades. Please contact us for questions on other grades available at GUK Magnetics.

# Technical Datasheet: Neodymium N35H – Anisotropic Sintered

## Demagnetisation Curve N35H



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

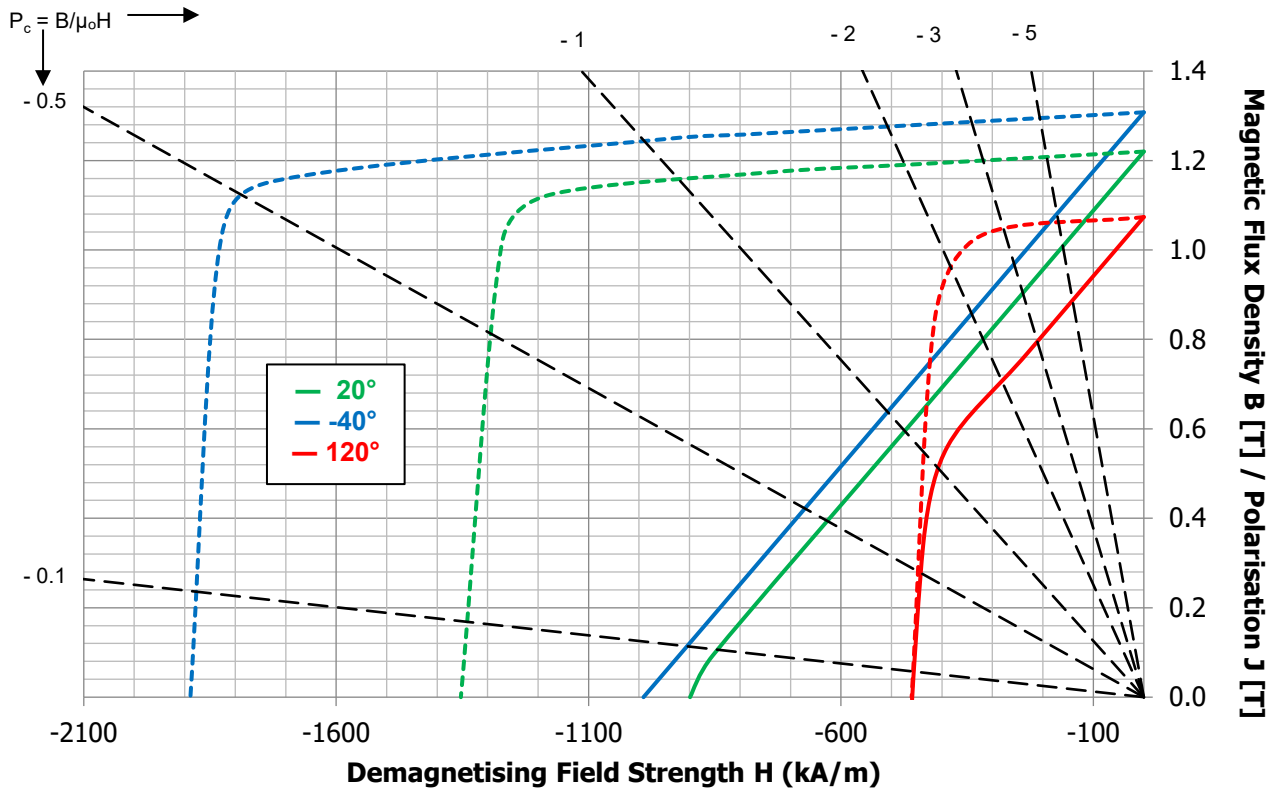
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.17	T
<b>H<sub>cB</sub></b>	min	868	kA/m
<b>H<sub>cJ</sub></b>	min	1353	kA/m
<b>(BH)<sub>ma</sub></b>	min	259	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.66	%/°C
<b>T<sub>max</sub></b>		120	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N38H – Anisotropic Sintered

## Demagnetisation Curve N38H



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

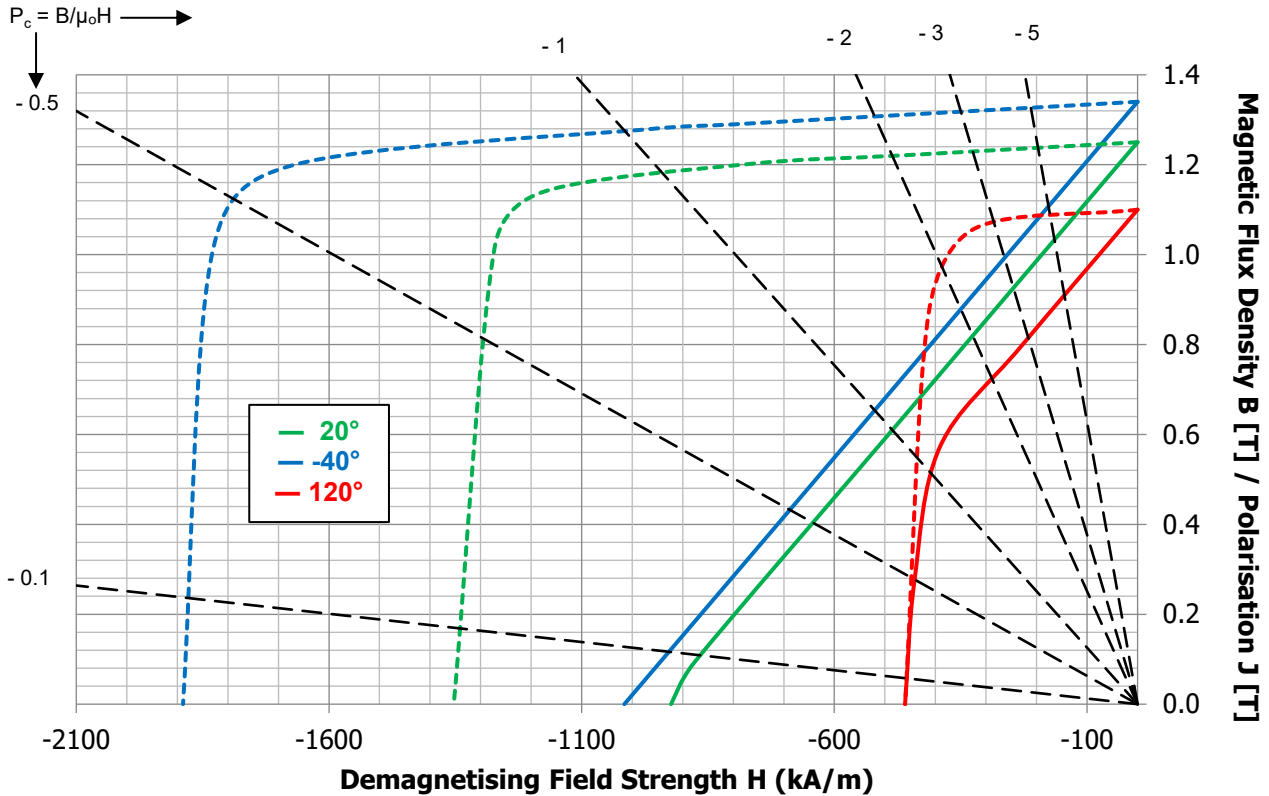
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.22	T
<b>H<sub>cB</sub></b>	min	899	kA/m
<b>H<sub>cJ</sub></b>	min	1353	kA/m
<b>(BH)<sub>ma</sub></b>	min	281	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.66	%/°C
<b>T<sub>max</sub></b>		120	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N40H – Anisotropic Sintered

## Demagnetisation Curve N40H



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

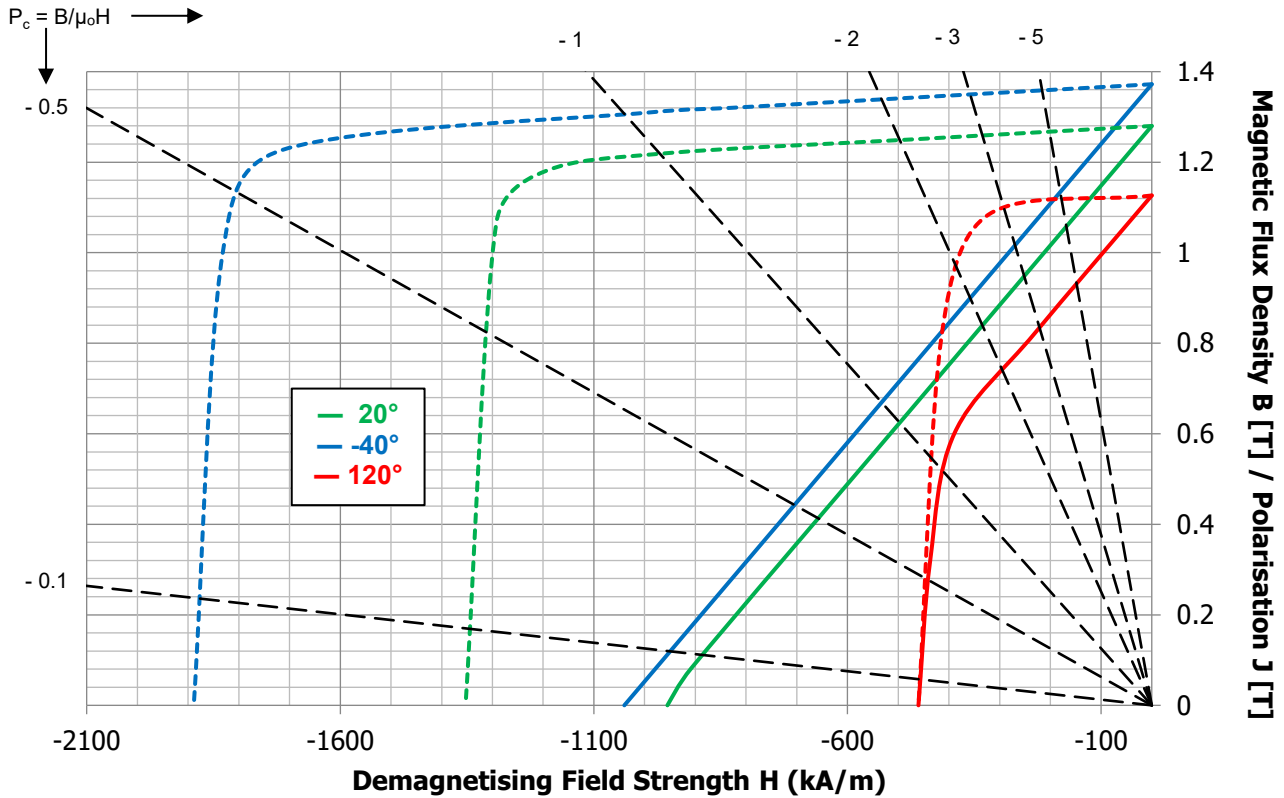
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.25	T
<b>H<sub>cB</sub></b>	min	923	kA/m
<b>H<sub>cJ</sub></b>	min	1353	kA/m
<b>(BH)<sub>ma</sub></b>	min	300	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.66	%/°C
<b>T<sub>max</sub></b>		120	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N42H – Anisotropic Sintered

## Demagnetisation Curve N42H



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

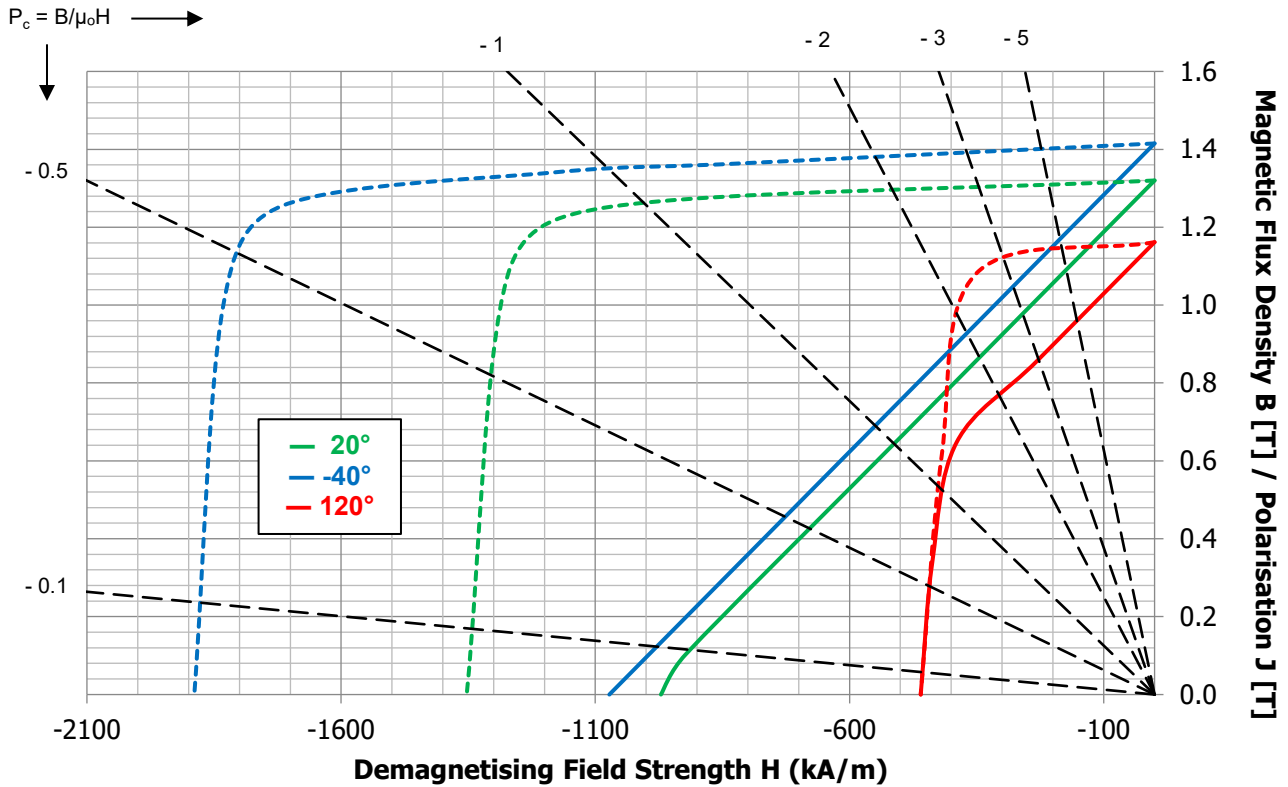
Magnetic Properties @20°C			
$B_r$	min	1.28	T
$H_{cB}$	min	955	kA/m
$H_{cJ}$	min	1353	kA/m
$(BH)_{ma}$	min	318	$\text{kJ/m}^3$
$\alpha(B_r)$	min typ	-0.12	%/°C
$\beta(H_{cJ})$	min typ	-0.66	%/°C
$T_{max}$		120	°C
$\mu_r$	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	$\text{kg/m}^3$
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	$\mu\Omega\text{m}$
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	$10^{-6}/\text{K}$
Coefficient of linear thermal expansion, $\perp$ DOM*	typ	-3 - 0	$10^{-6}/\text{K}$

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N45H – Anisotropic Sintered

## Demagnetisation Curve N45H



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

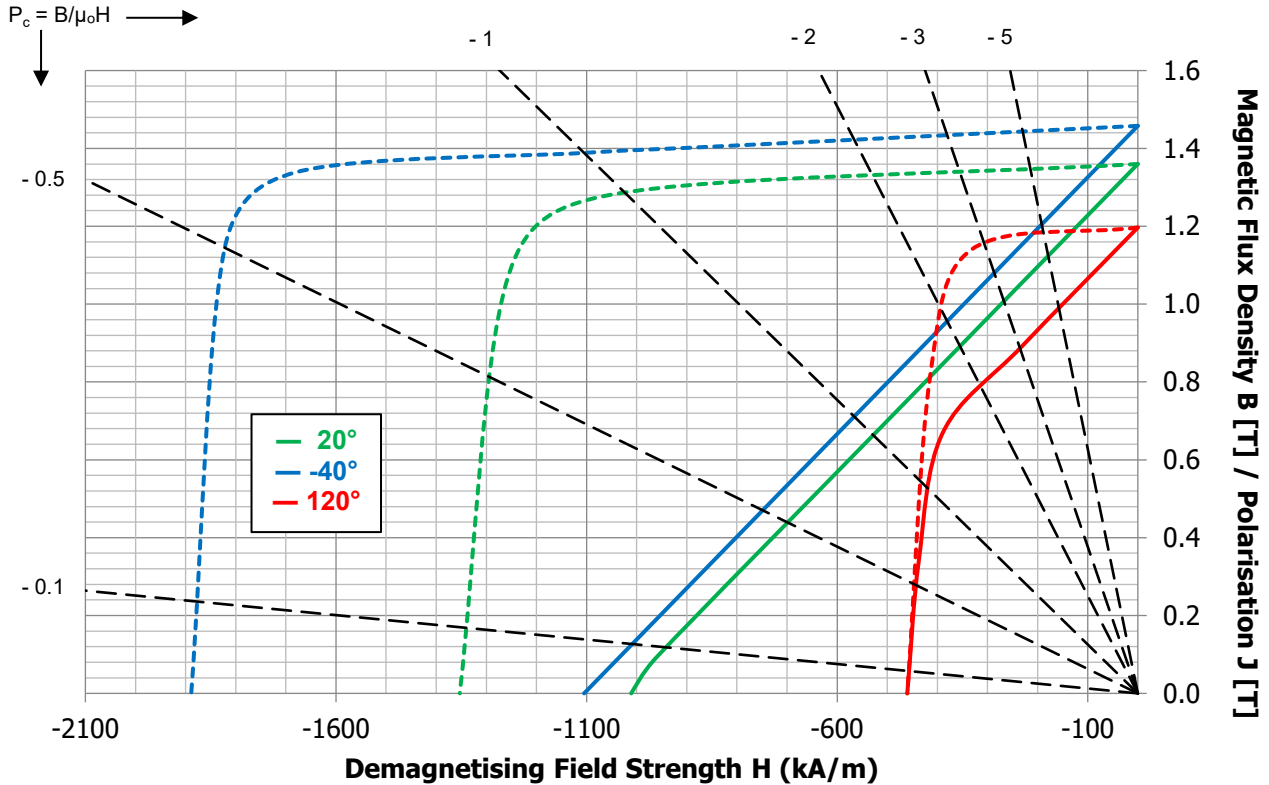
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.32	T
<b>H<sub>cB</sub></b>	min	971	kA/m
<b>H<sub>cJ</sub></b>	min	1353	kA/m
<b>(BH)<sub>ma</sub></b>	min	333	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.66	%/°C
<b>T<sub>max</sub></b>		120	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N48H – Anisotropic Sintered

## Demagnetisation Curve N48H



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

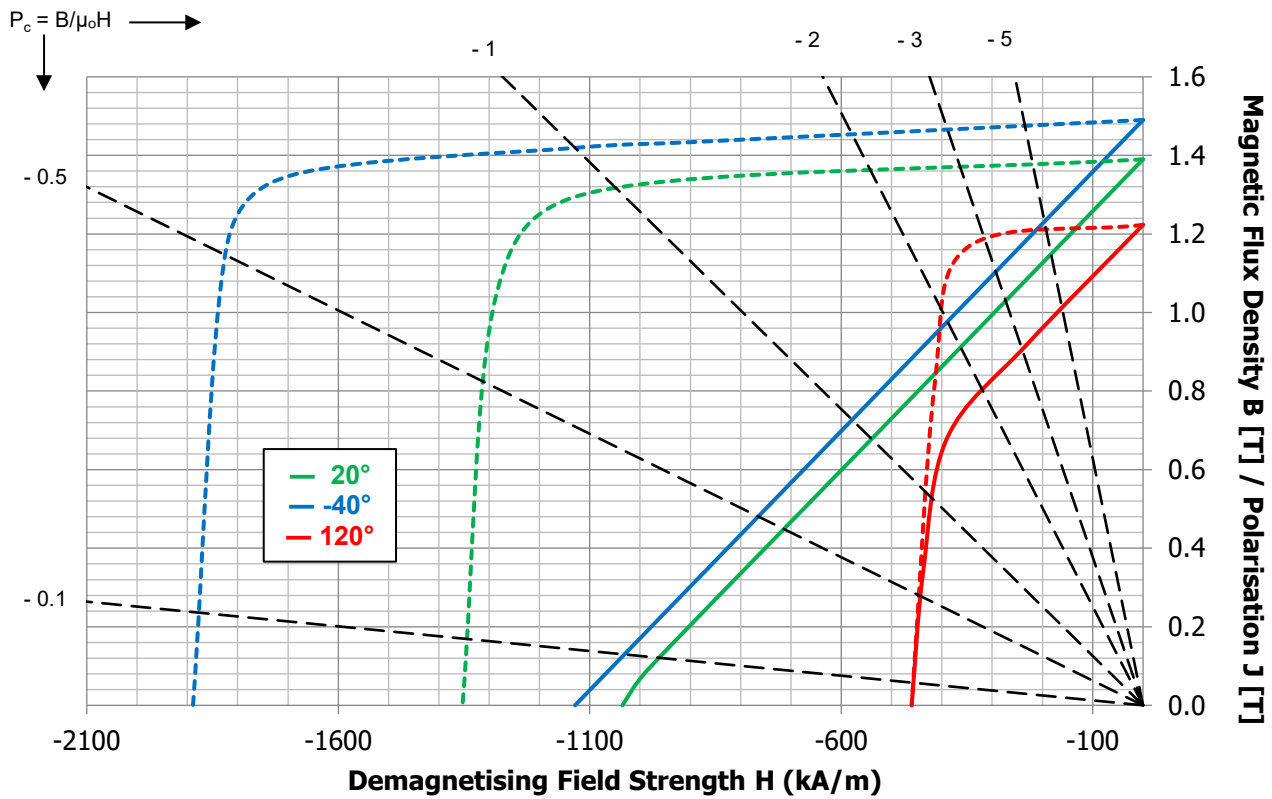
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.36	T
<b>H<sub>cB</sub></b>	min	1011	kA/m
<b>H<sub>cJ</sub></b>	min	1353	kA/m
<b>(BH)<sub>ma</sub></b>	min	358	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.66	%/°C
<b>T<sub>max</sub></b>		120	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N50H – Anisotropic Sintered

## Demagnetisation Curve N50H



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

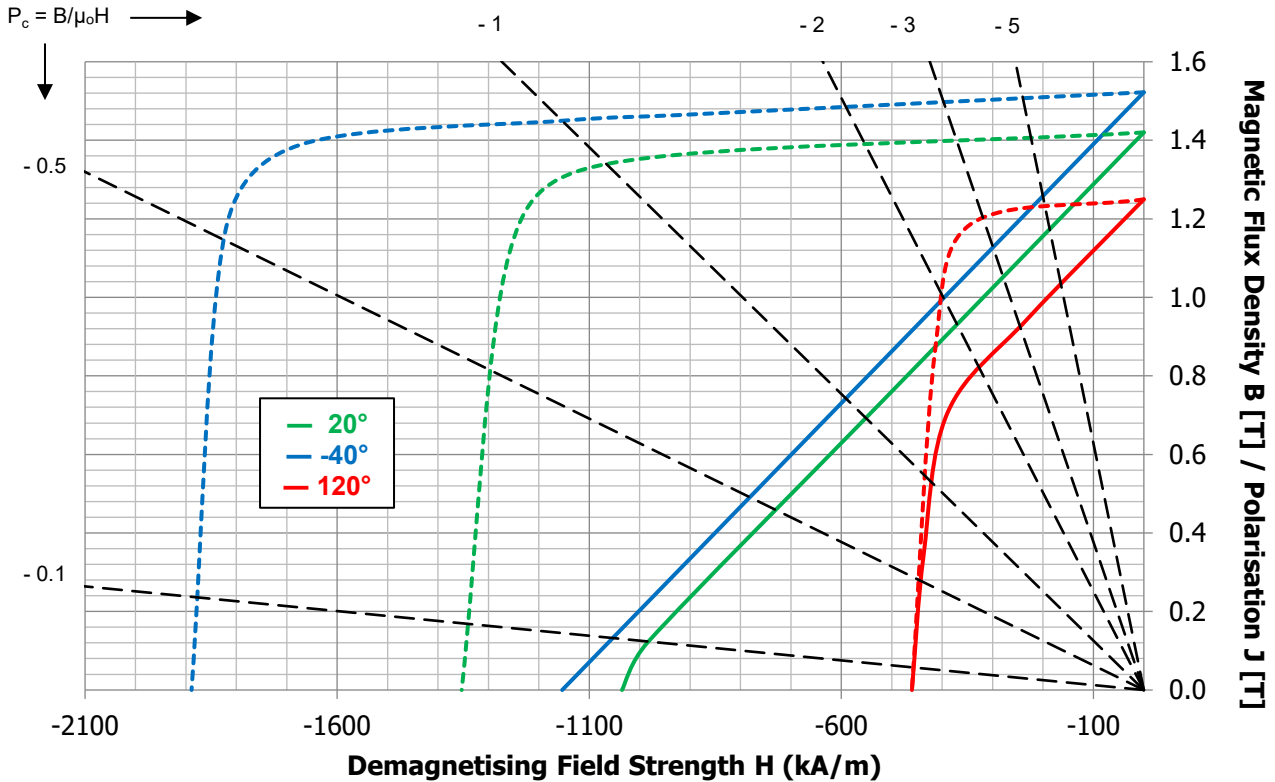
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.39	T
<b>H<sub>cb</sub></b>	min	1035	kA/m
<b>H<sub>cj</sub></b>	min	1353	kA/m
<b>(BH)<sub>ma</sub></b>	min	374	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cj</sub>)</b>	min typ	-0.66	%/°C
<b>T<sub>max</sub></b>		120	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N52H – Anisotropic Sintered

## Demagnetisation Curve N52H



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

Magnetic Properties @20°C			
$B_r$	min	1.42	T
$H_{cB}$	min	1035	kA/m
$H_{cJ}$	min	1353	kA/m
$(BH)_{ma}$	min	390	$\text{kJ/m}^3$
$\alpha(B_r)$	min typ	-0.12	%/°C
$\beta(H_{cJ})$	min typ	-0.66	%/°C
$T_{max}$		120	°C
$\mu_r$	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	$\text{kg/m}^3$
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	$\mu\Omega\text{m}$
Specific heat capacity	typ	350 - 550	$\text{J}/(\text{kg K})$
Thermal conductivity	typ	5 - 15	$\text{W}/(\text{m K})$
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	$10^{-6}/\text{K}$
Coefficient of linear thermal expansion, $\perp$ DOM*	typ	-3 - 0	$10^{-6}/\text{K}$

\* DOM = Direction Of Magnetisation

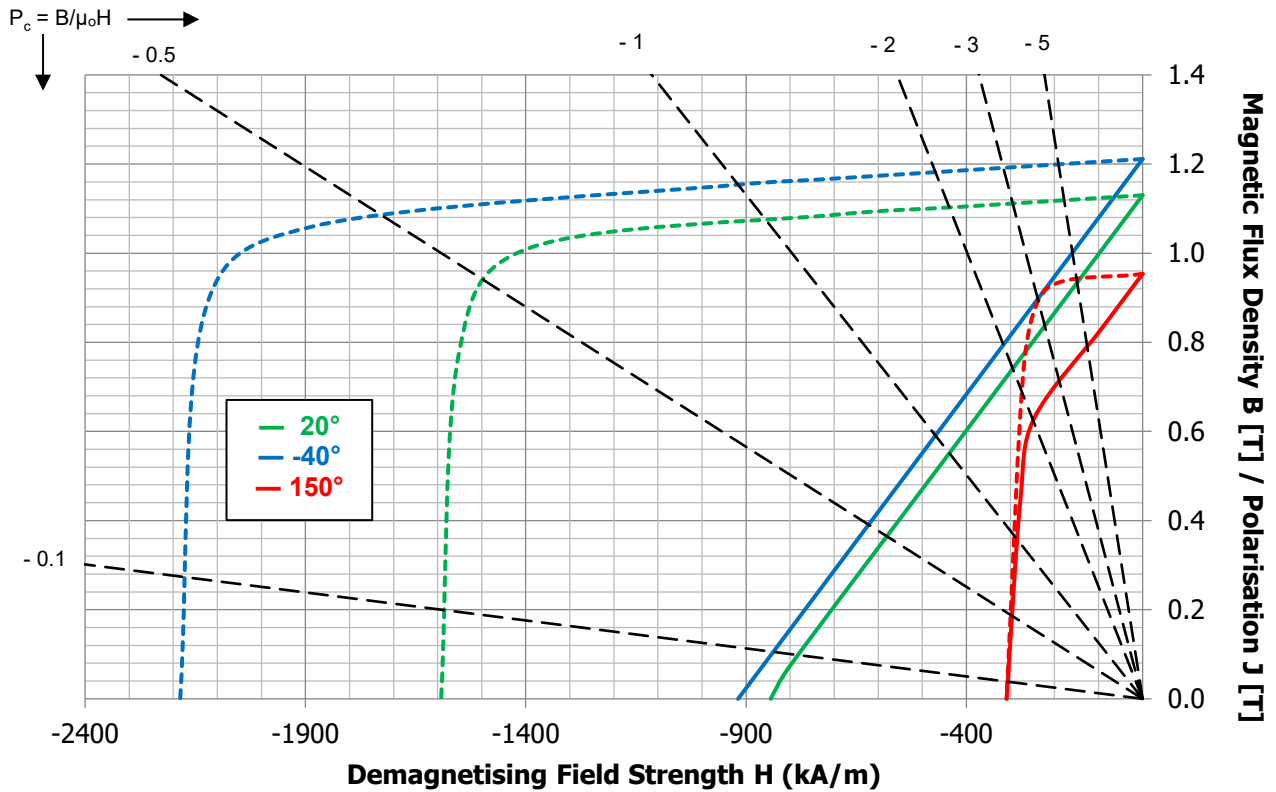
## SH- Grades

GUK Magnetic s Grade Code	Remanence $B_r$	Normal Coercivity $H_{cB}$	Intrinsic Coercivity $H_{cJ}$	Maximum Energy Product $(BH)_{max}$	Remanence Temperature Coefficient $\alpha(B_r)$	Intrinsic Coercivity Temperature Coefficient $\beta(H_{cJ})$	Maximum Operating Temperature $T_{max}$
	Minimum Value	Minimum Value	Minimum Value	Minimum Value	Minimum Typical Value	Minimum Typical Value	Maximum Value
	[mT]	[kA/m]	[kA/m]	[kJ/m <sup>3</sup> ]	[%/°C]	[%/°C]	[°C]
<a href="#">N33SH</a>	1130	844	1592	246	-0.12	-0.62	150
<a href="#">N35SH</a>	1170	876	1592	259	-0.12	-0.62	150
<a href="#">N38SH</a>	1220	907	1592	281	-0.12	-0.62	150
<a href="#">N40SH</a>	1250	939	1592	300	-0.12	-0.62	150
<a href="#">N42SH</a>	1280	955	1592	318	-0.12	-0.62	150
<a href="#">N45SH</a>	1320	979	1592	333	-0.12	-0.62	150
<a href="#">N48SH</a>	1360	995	1592	358	-0.12	-0.62	150
<a href="#">N50SH</a>	1390	995	1592	374	-0.12	-0.62	150
<a href="#">N52SH</a>	1420	995	1592	390	-0.12	-0.62	150

These are the most common grades. Please contact us for questions on other grades available at GUK Magnetics.

# Technical Datasheet: Neodymium N33SH – Anisotropic Sintered

## Demagnetisation Curve N33SH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

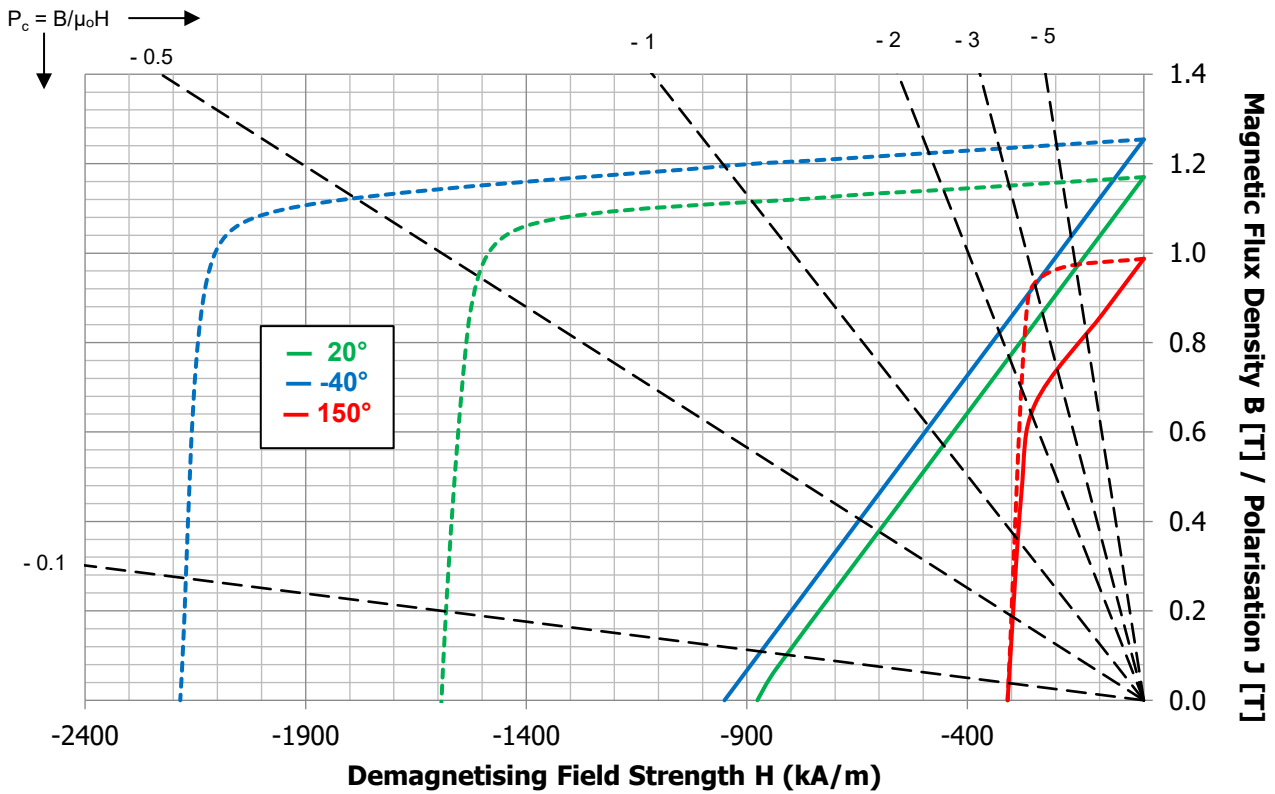
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.13	T
<b>H<sub>cB</sub></b>	min	844	kA/m
<b>H<sub>cJ</sub></b>	min	1592	kA/m
<b>(BH)<sub>ma</sub></b>	min	246	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.62	%/°C
<b>T<sub>max</sub></b>		150	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N35SH – Anisotropic Sintered

## Demagnetisation Curve N35SH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

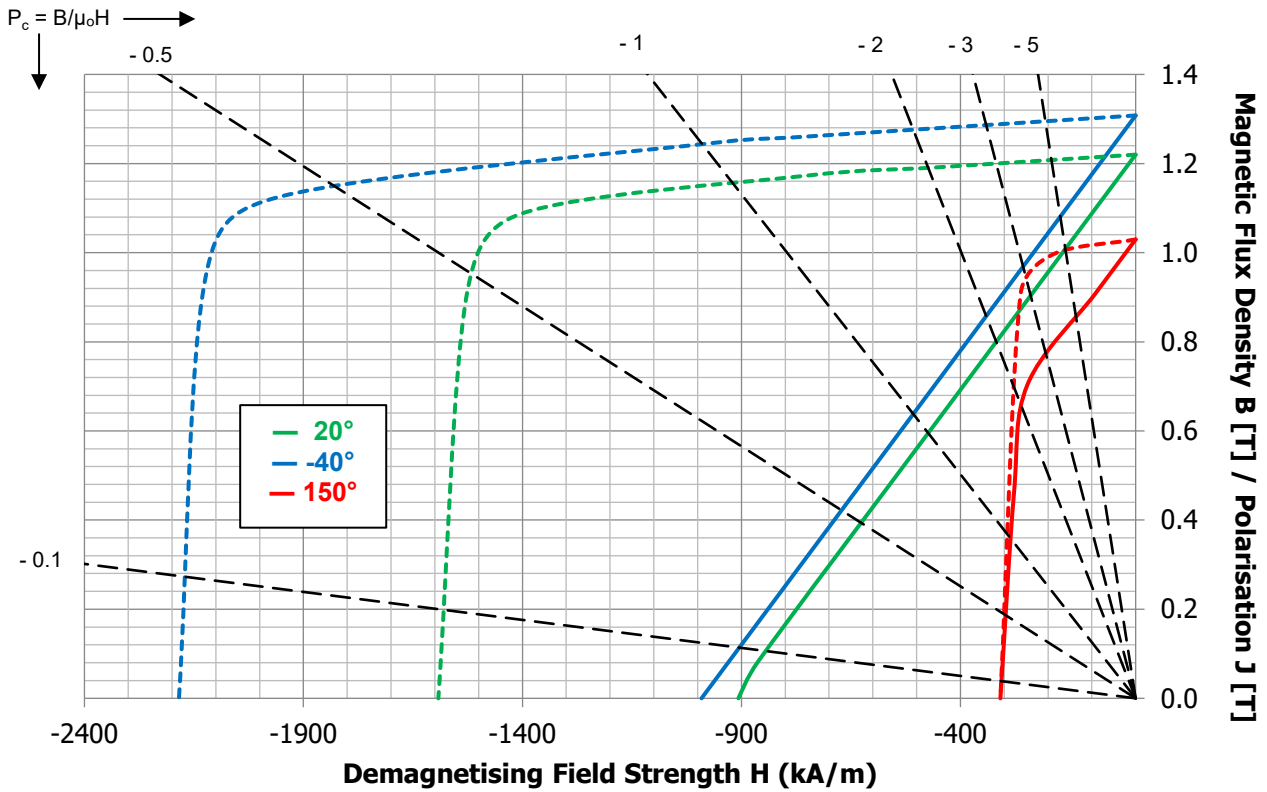
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.17	T
<b>H<sub>cB</sub></b>	min	876	kA/m
<b>H<sub>cJ</sub></b>	min	1592	kA/m
<b>(BH)<sub>ma</sub></b>	min	259	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.62	%/°C
<b>T<sub>max</sub></b>		150	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N38SH – Anisotropic Sintered

## Demagnetisation Curve N38SH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

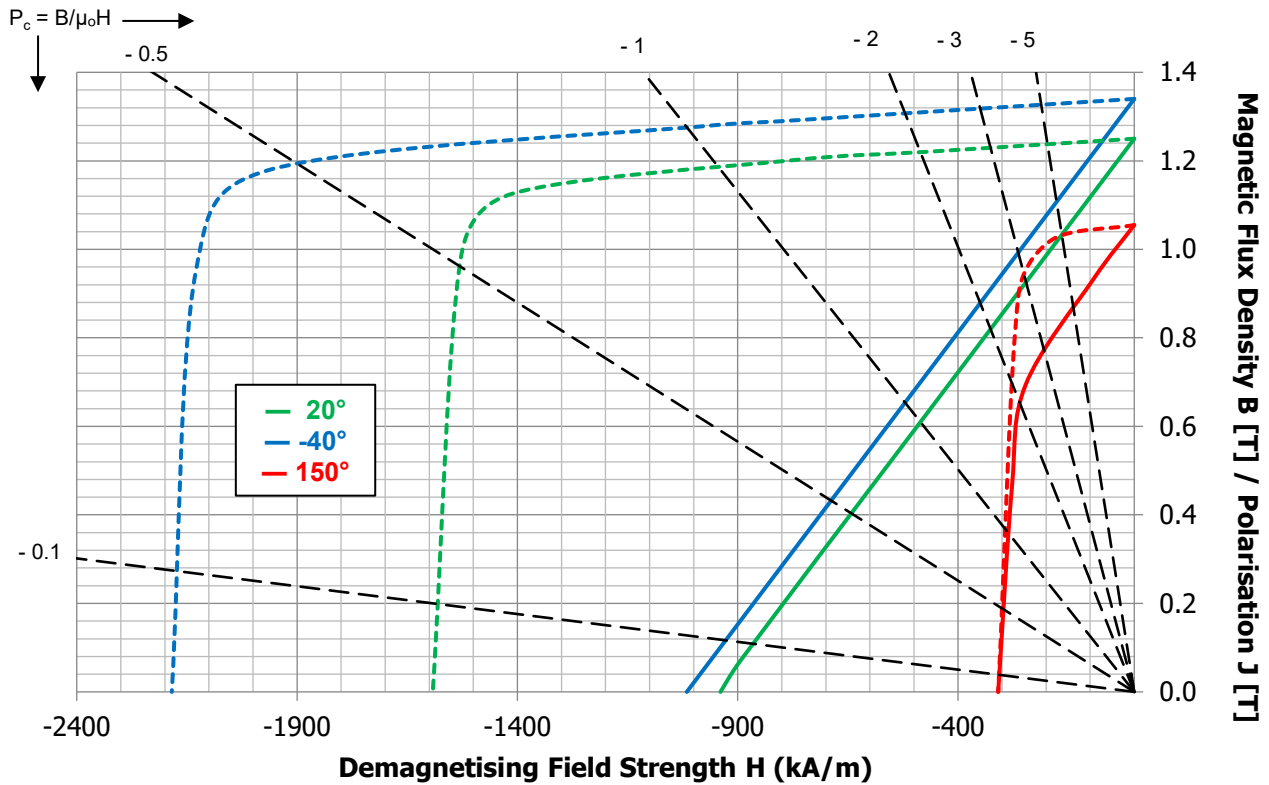
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.22	T
<b>H<sub>cb</sub></b>	min	907	kA/m
<b>H<sub>cJ</sub></b>	min	1592	kA/m
<b>(BH)<sub>ma</sub></b>	min	281	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.62	%/°C
<b>T<sub>max</sub></b>		150	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N40SH – Anisotropic Sintered

## Demagnetisation Curve N40SH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

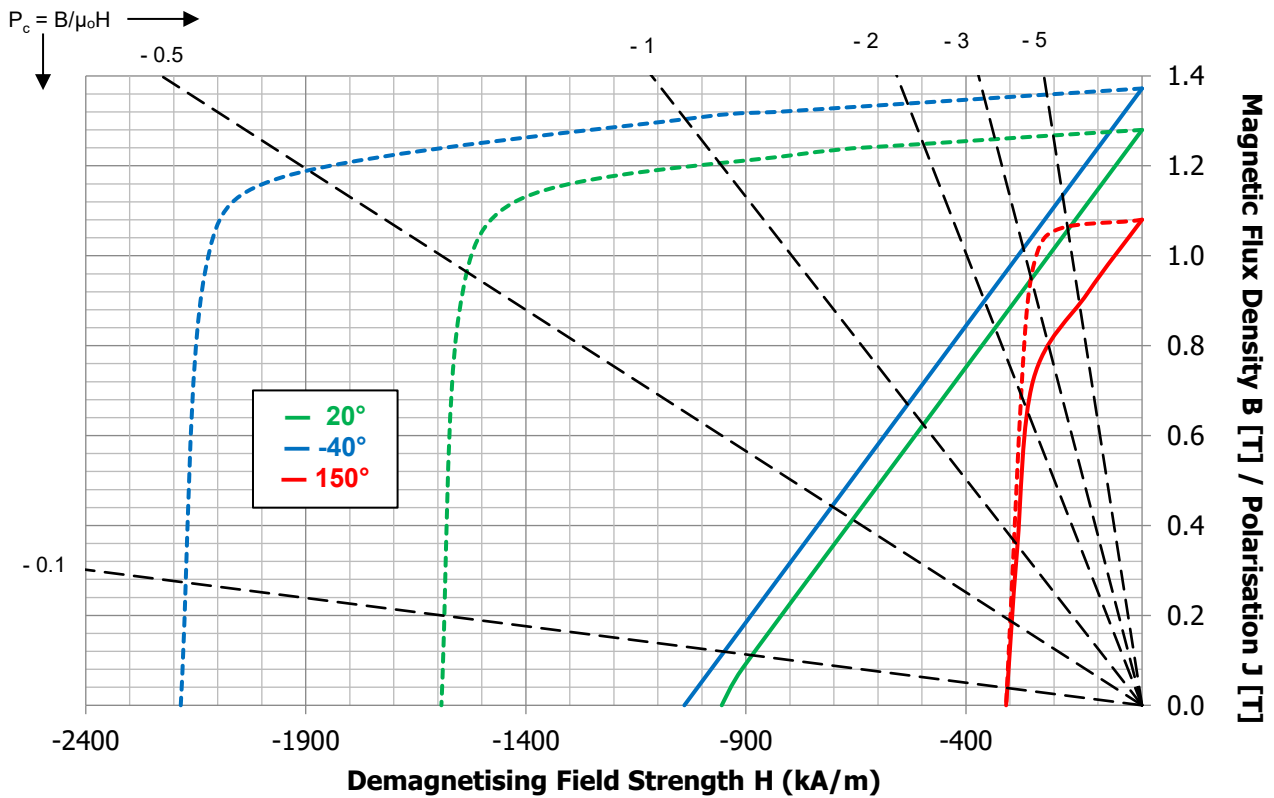
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.25	T
<b>H<sub>cB</sub></b>	min	939	kA/m
<b>H<sub>cJ</sub></b>	min	1592	kA/m
<b>(BH)<sub>ma</sub></b>	min	300	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.62	%/°C
<b>T<sub>max</sub></b>		150	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N42SH – Anisotropic Sintered

## Demagnetisation Curve N42SH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

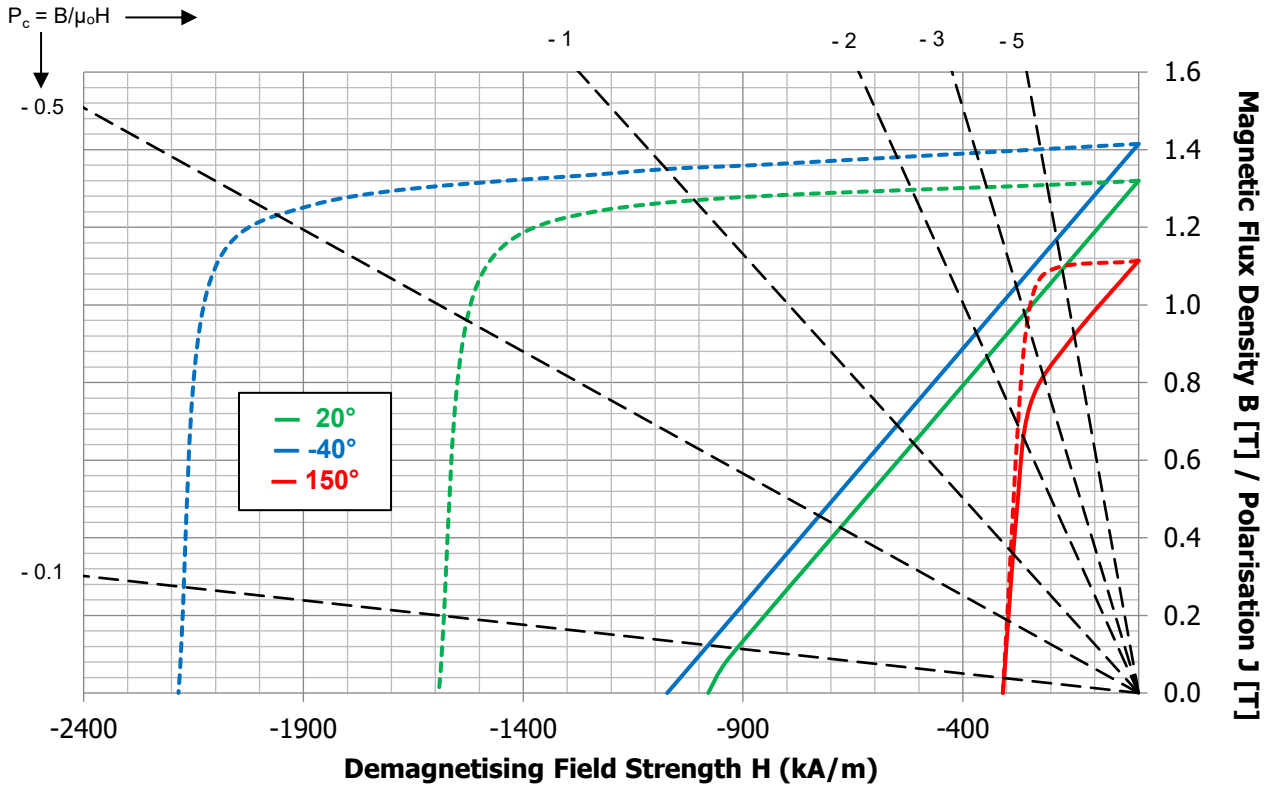
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.28	T
<b>H<sub>cB</sub></b>	min	955	kA/m
<b>H<sub>cJ</sub></b>	min	1592	kA/m
<b>(BH)<sub>ma</sub></b>	min	318	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.62	%/°C
<b>T<sub>max</sub></b>		150	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N45SH – Anisotropic Sintered

## Demagnetisation Curve N45SH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

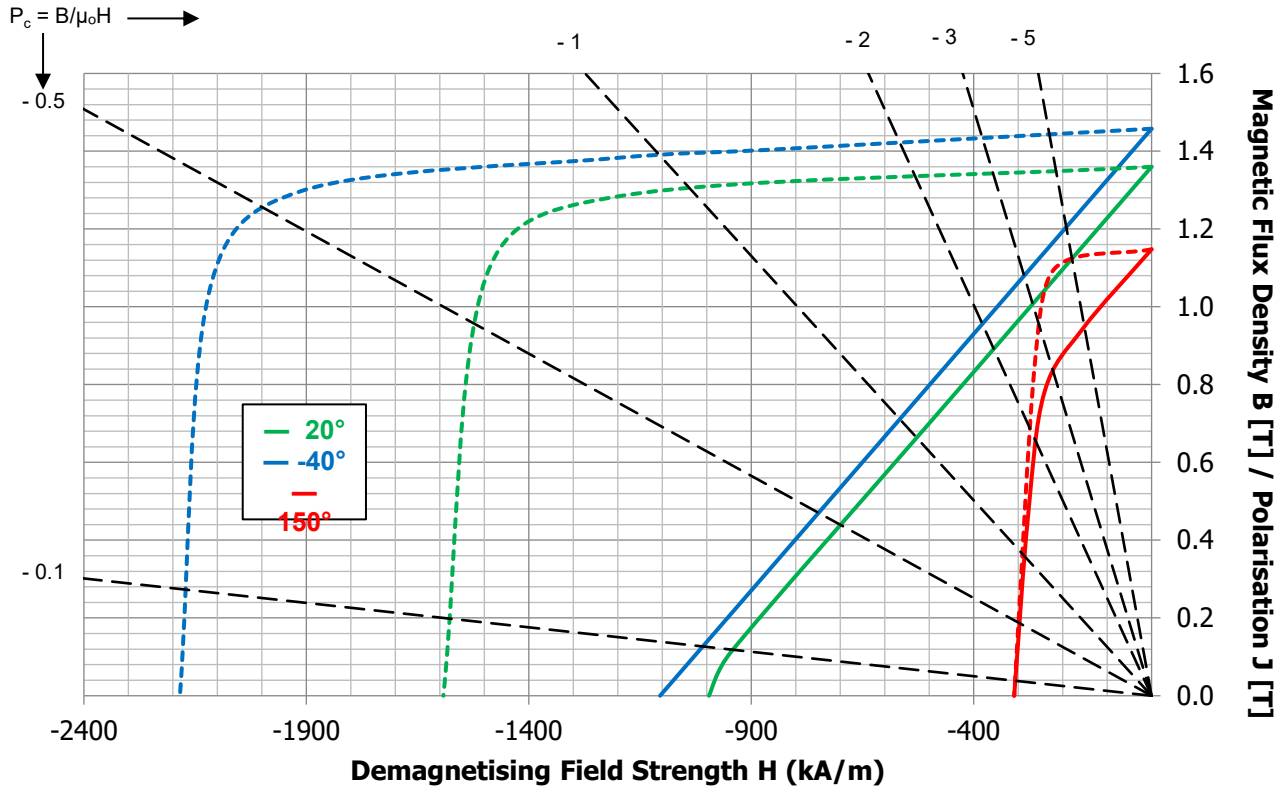
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.32	T
<b>H<sub>cB</sub></b>	min	979	kA/m
<b>H<sub>cJ</sub></b>	min	1592	kA/m
<b>(BH)<sub>ma</sub></b>	min	333	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.62	%/°C
<b>T<sub>max</sub></b>		150	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N48SH – Anisotropic Sintered

## Demagnetisation Curve N48SH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

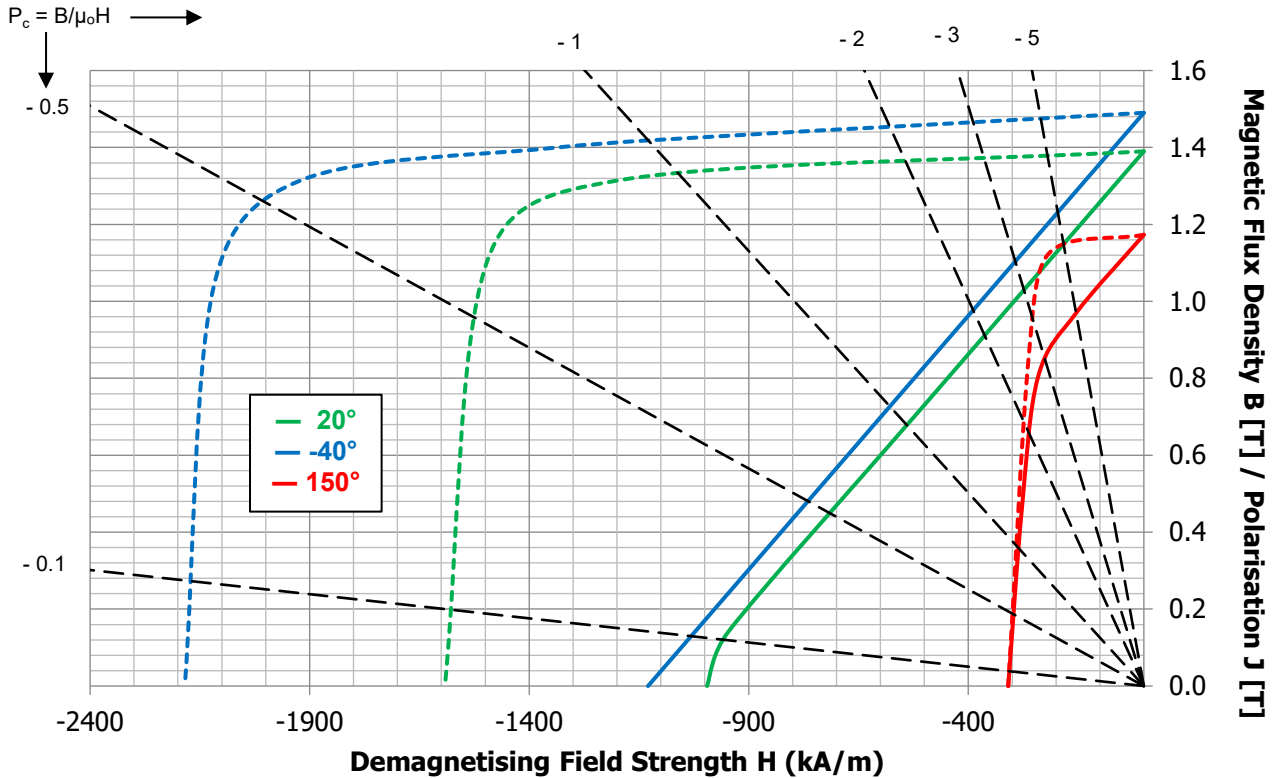
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.36	T
<b>H<sub>cB</sub></b>	min	995	kA/m
<b>H<sub>cJ</sub></b>	min	1592	kA/m
<b>(BH)<sub>ma</sub></b>	min	358	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.62	%/°C
<b>T<sub>max</sub></b>		150	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N50SH – Anisotropic Sintered

## Demagnetisation Curve N50SH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

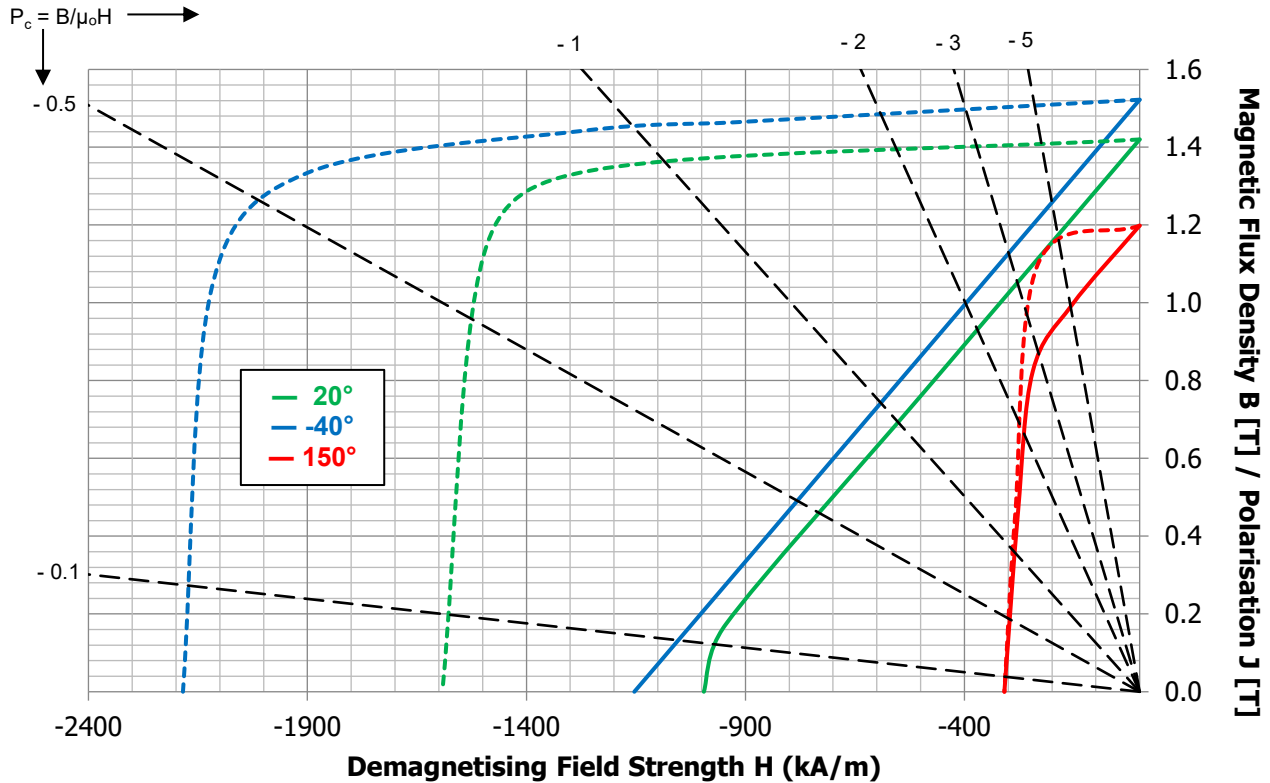
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.39	T
<b>H<sub>cB</sub></b>	min	995	kA/m
<b>H<sub>cJ</sub></b>	min	1592	kA/m
<b>(BH)<sub>ma</sub></b>	min	374	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.62	%/°C
<b>T<sub>max</sub></b>		150	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N52SH – Anisotropic Sintered

## Demagnetisation Curve N52SH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.42	T
<b>H<sub>cB</sub></b>	min	995	kA/m
<b>H<sub>cJ</sub></b>	min	1592	kA/m
<b>(BH)<sub>ma</sub></b>	min	390	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.12	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.62	%/°C
<b>T<sub>max</sub></b>		150	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

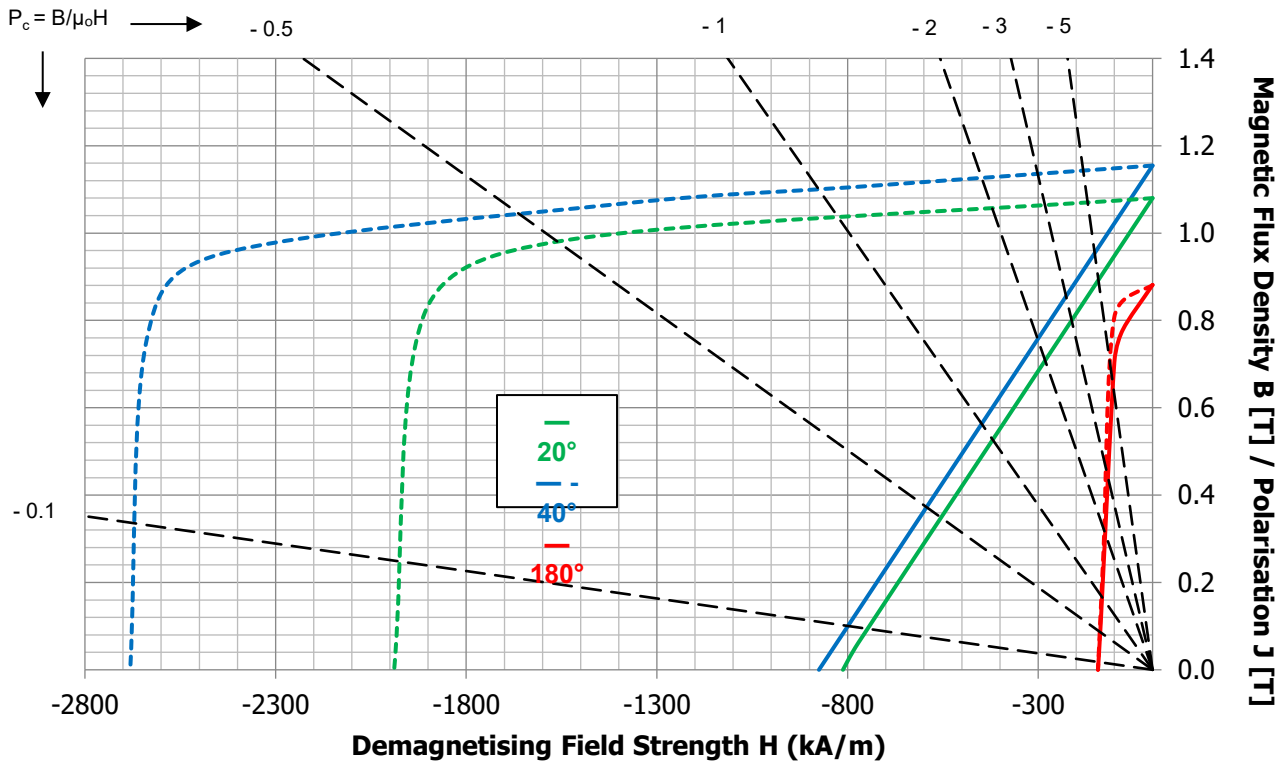
## UH- Grades

GUK Magnetic s Grade Code	Remanence $B_r$	Normal Coercivity $H_{cB}$	Intrinsic Coercivity $H_{cJ}$	Maximum Energy Product $(BH)_{max}$	Remanence Temperature Coefficient $\alpha(B_r)$	Intrinsic Coercivity Temperature Coefficient $\beta(H_{cJ})$	Maximum Operating Temperature $T_{max}$
	Minimum Value	Minimum Value	Minimum Value	Minimum Value	Minimum Typical Value	Minimum Typical Value	Maximum Value
	[mT]	[kA/m]	[kA/m]	[kJ/m <sup>3</sup> ]	[%/°C]	[%/°C]	[°C]
<a href="#">N30UH</a>	1080	812	1989	220	-0.115	-0.58	180
<a href="#">N33UH</a>	1130	852	1989	246	-0.115	-0.58	180
<a href="#">N35UH</a>	1170	860	1989	259	-0.115	-0.58	180
<a href="#">N38UH</a>	1220	876	1989	281	-0.115	-0.58	180
<a href="#">N40UH</a>	1250	915	1989	300	-0.115	-0.58	180
<a href="#">N42UH</a>	1270	955	1989	318	-0.115	-0.58	180
<a href="#">N45UH</a>	1320	995	1989	333	-0.115	-0.58	180
<a href="#">N48UH</a>	1370	995	1989	358	-0.115	-0.58	180
<a href="#">N50UH</a>	1390	995	1989	374	-0.115	-0.58	180

These are the most common grades. Please contact us for questions on other grades available at GUK Magnetics.

# Technical Datasheet: Neodymium N30UH – Anisotropic Sintered

## Demagnetisation Curve N30UH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

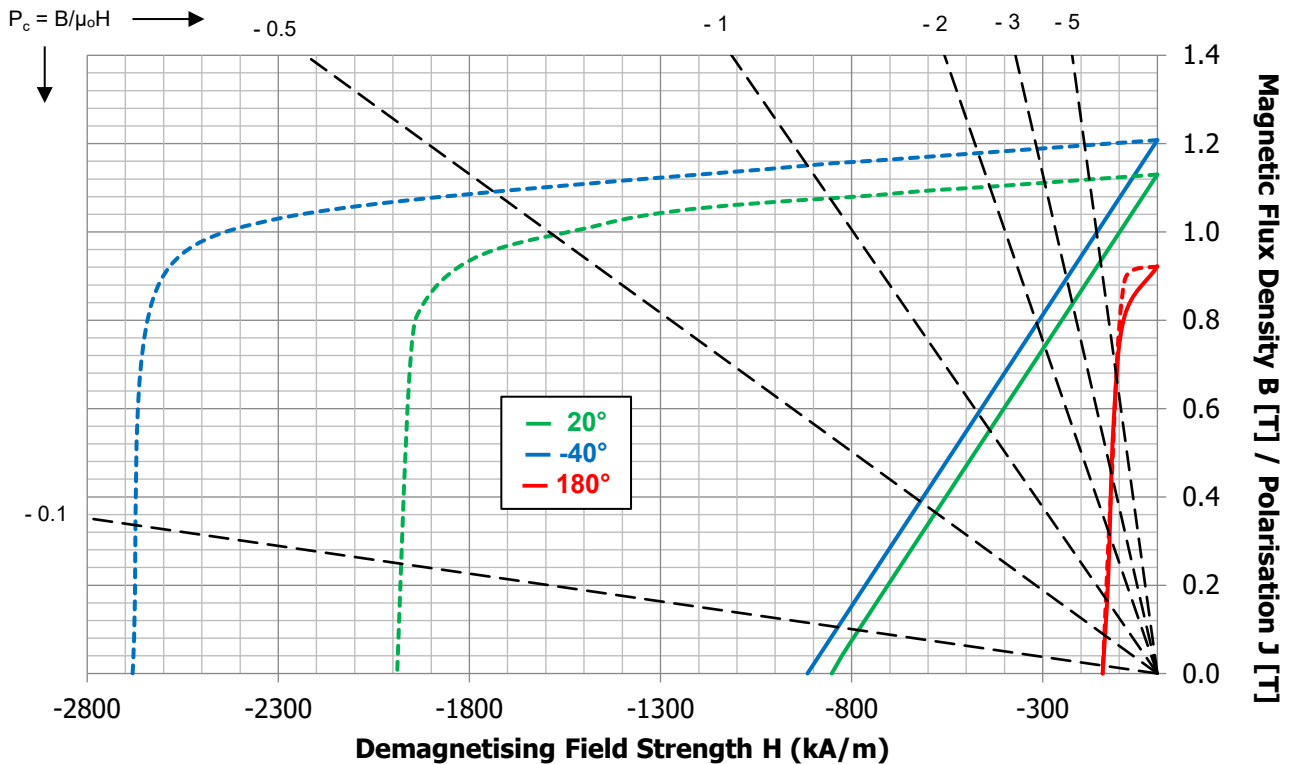
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.08	T
<b>H<sub>cB</sub></b>	min	812	kA/m
<b>H<sub>cJ</sub></b>	min	1989	kA/m
<b>(BH)<sub>ma</sub></b>	min	220	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.115	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.58	%/°C
<b>T<sub>max</sub></b>		180	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N33UH – Anisotropic Sintered

## Demagnetisation Curve N33UH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

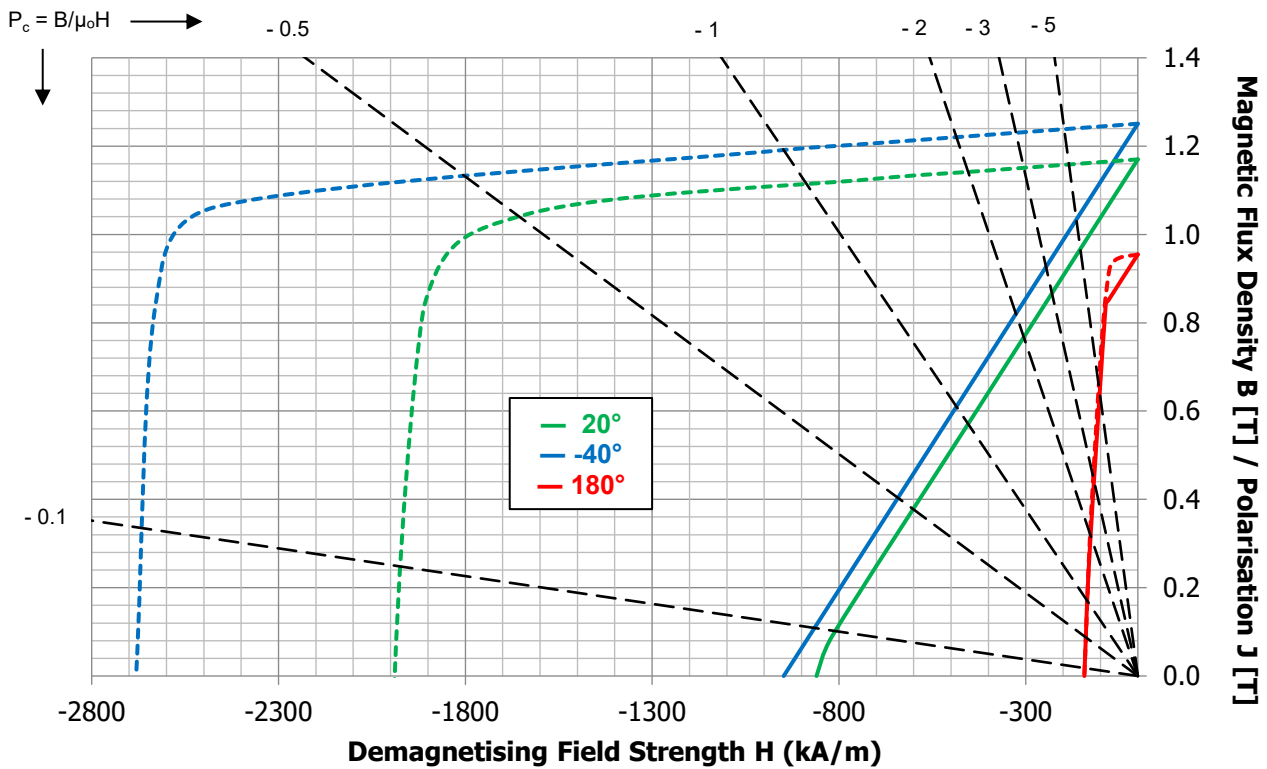
Magnetic properties @20°C			
<b>B<sub>r</sub></b>	min	1.13	T
<b>H<sub>cB</sub></b>	min	852	kA/m
<b>H<sub>cJ</sub></b>	min	1989	kA/m
<b>(BH)<sub>ma</sub></b>	min	246	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.115	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.58	%/°C
<b>T<sub>max</sub></b>		180	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N35UH – Anisotropic Sintered

## Demagnetisation Curve N35UH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

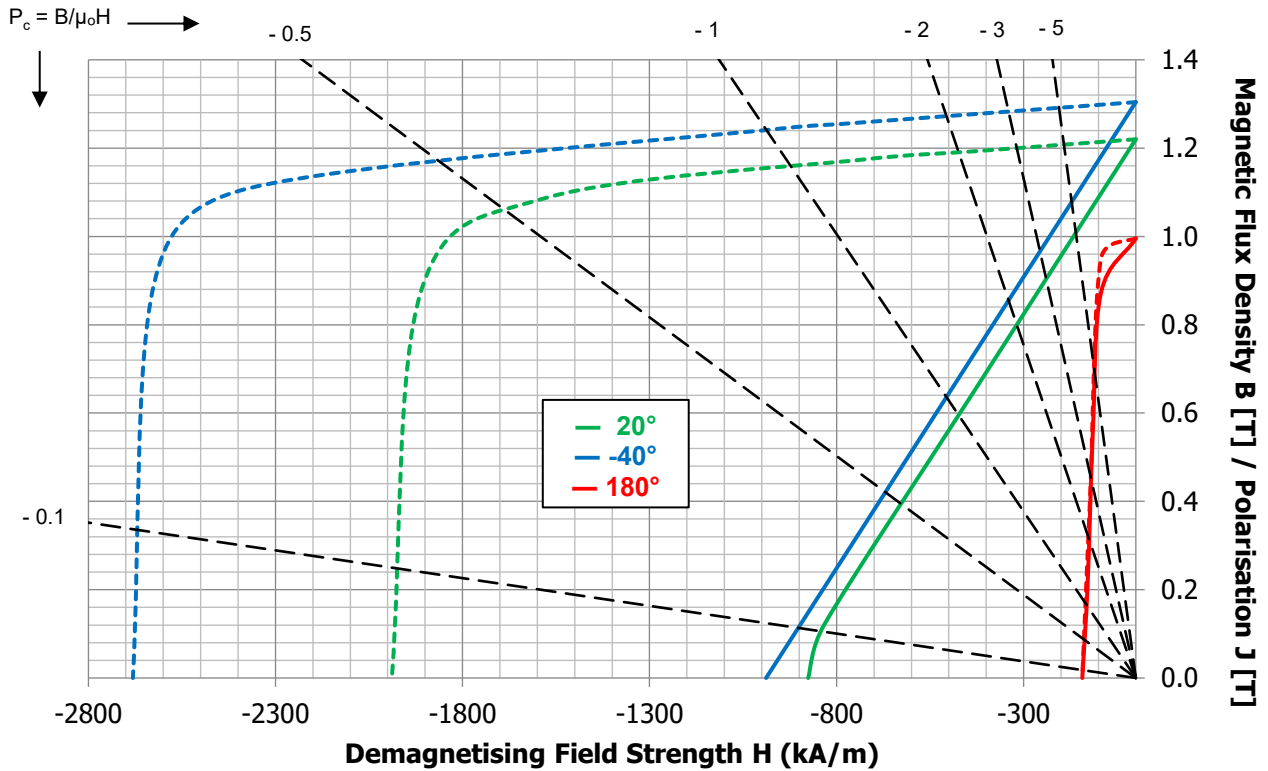
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.17	T
<b>H<sub>cB</sub></b>	min	860	kA/m
<b>H<sub>cJ</sub></b>	min	1989	kA/m
<b>(BH)<sub>ma</sub></b>	min	259	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.115	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.58	%/°C
<b>T<sub>max</sub></b>		180	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N38UH – Anisotropic Sintered

## Demagnetisation Curve N38UH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

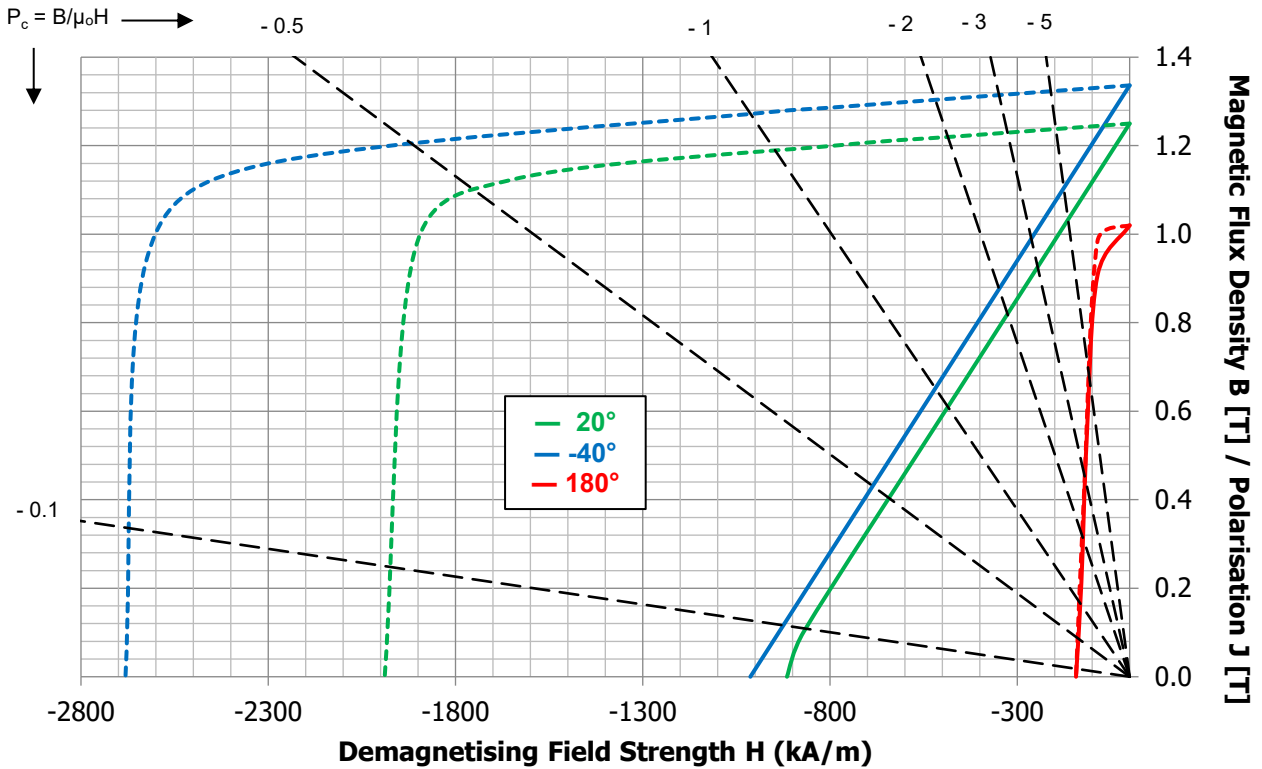
Magnetic properties @20°C			
<b>B<sub>r</sub></b>	min	1.22	T
<b>H<sub>cB</sub></b>	min	876	kA/m
<b>H<sub>cJ</sub></b>	min	1989	kA/m
<b>(BH)<sub>ma</sub></b>	min	281	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.115	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.58	%/°C
<b>T<sub>max</sub></b>		180	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N40UH – Anisotropic Sintered

## Demagnetisation Curve N40UH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

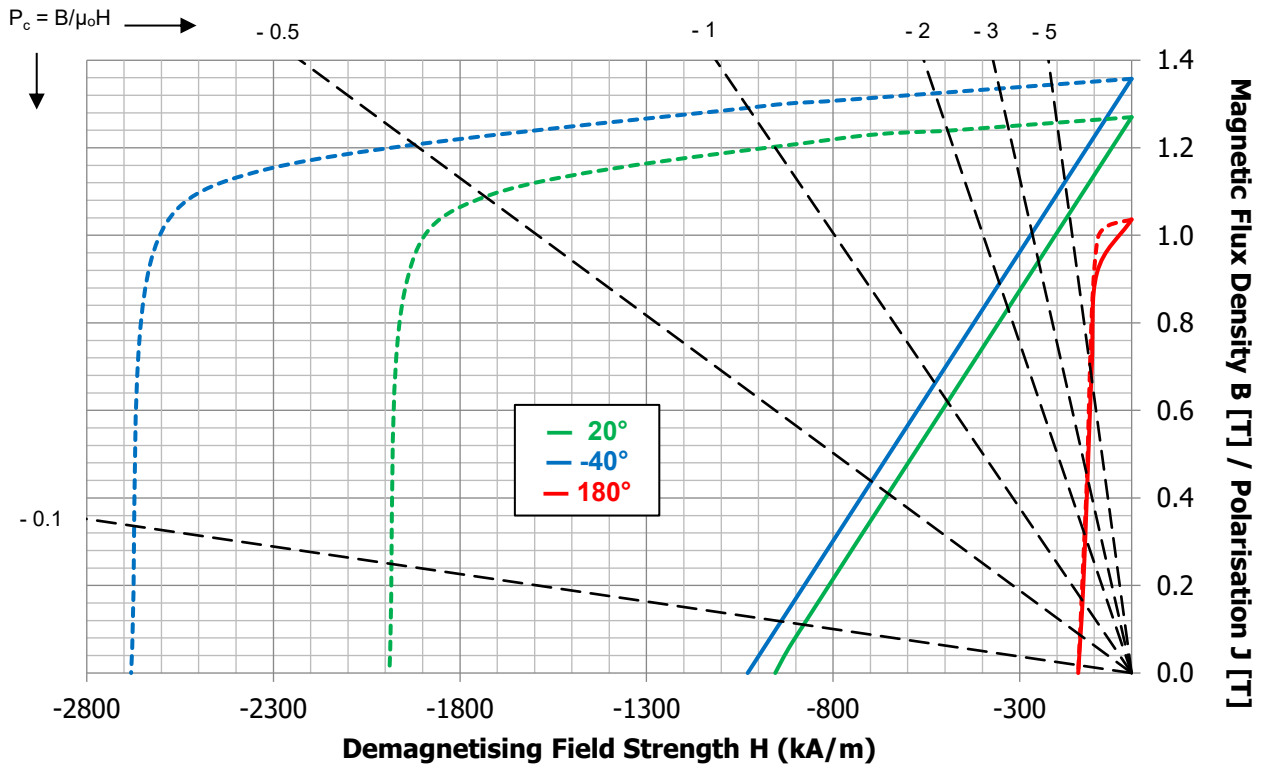
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.25	T
<b>H<sub>cb</sub></b>	min	915	kA/m
<b>H<sub>cj</sub></b>	min	1989	kA/m
<b>(BH)<sub>ma</sub></b>	min	300	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.115	%/°C
<b>β(H<sub>cj</sub>)</b>	min typ	-0.58	%/°C
<b>T<sub>max</sub></b>		180	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N42UH – Anisotropic Sintered

## Demagnetisation Curve N42UH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

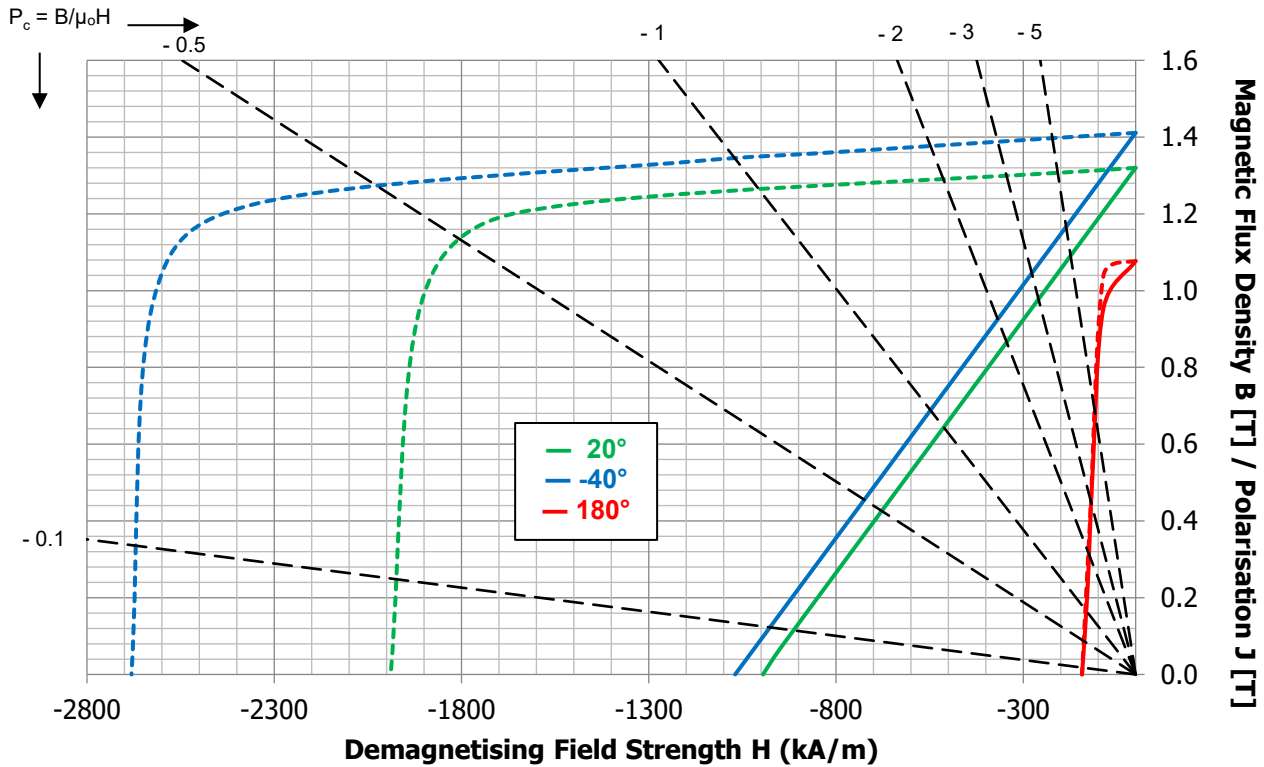
Magnetic properties @20°C			
<b>B<sub>r</sub></b>	min	1.27	T
<b>H<sub>cb</sub></b>	min	955	kA/m
<b>H<sub>cj</sub></b>	min	1989	kA/m
<b>(BH)<sub>ma</sub></b>	min	318	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.115	%/°C
<b>β(H<sub>cj</sub>)</b>	min typ	-0.58	%/°C
<b>T<sub>max</sub></b>		180	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N45UH – Anisotropic Sintered

## Demagnetisation Curve N45UH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

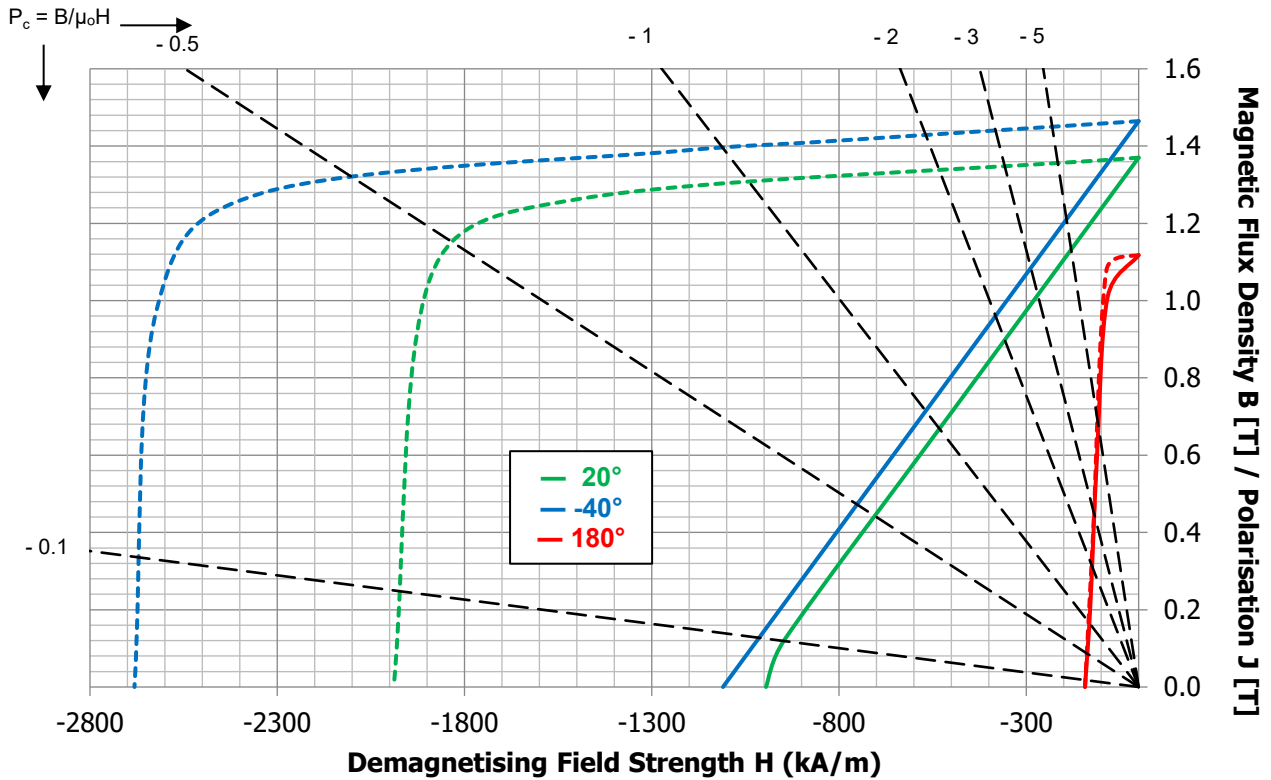
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.32	T
<b>H<sub>cB</sub></b>	min	995	kA/m
<b>H<sub>cJ</sub></b>	min	1989	kA/m
<b>(BH)<sub>ma</sub></b>	min	333	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.115	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.58	%/°C
<b>T<sub>max</sub></b>		180	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N48UH – Anisotropic Sintered

## Demagnetisation Curve N48UH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

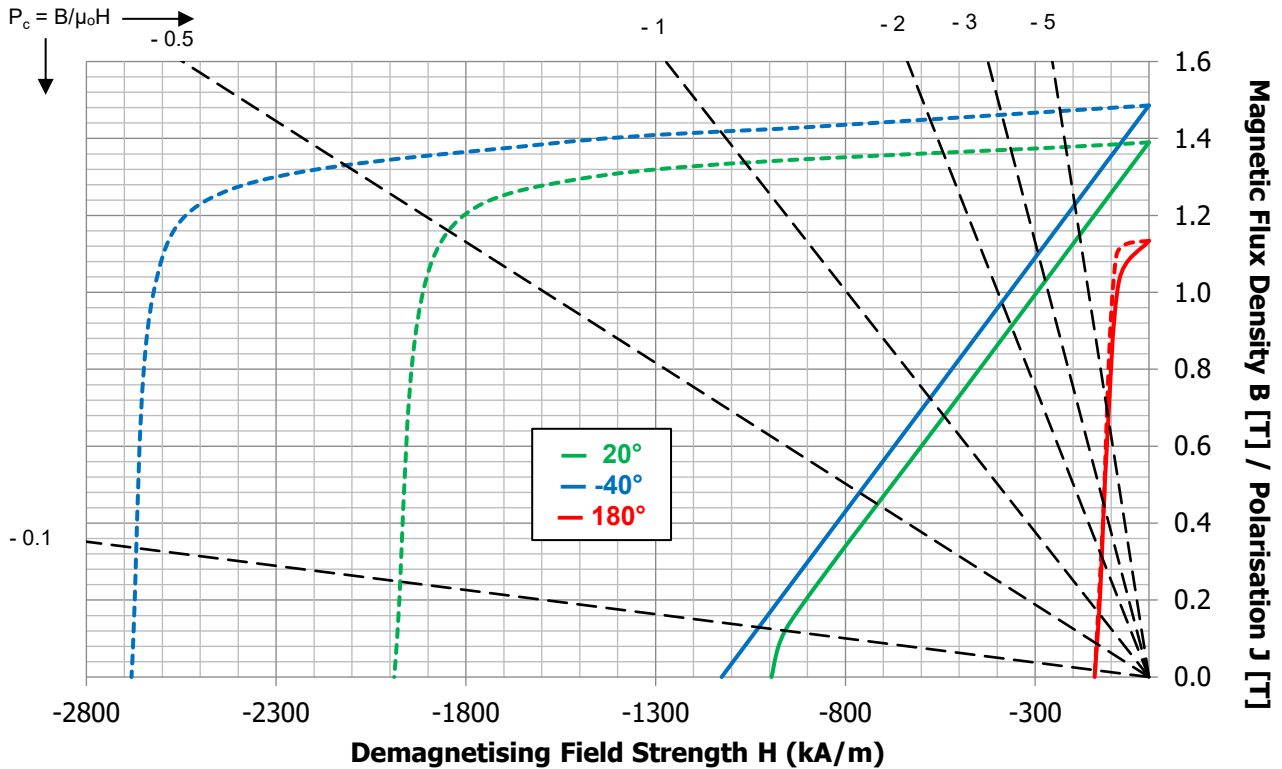
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.37	T
<b>H<sub>cB</sub></b>	min	995	kA/m
<b>H<sub>cJ</sub></b>	min	1989	kA/m
<b>(BH)<sub>ma</sub></b>	min	358	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.115	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.58	%/°C
<b>T<sub>max</sub></b>		180	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N50UH – Anisotropic Sintered

## Demagnetisation Curve N50UH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.39	T
<b>H<sub>cB</sub></b>	min	995	kA/m
<b>H<sub>cJ</sub></b>	min	1989	kA/m
<b>(BH)<sub>ma</sub></b>	min	374	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.115	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.58	%/°C
<b>T<sub>max</sub></b>		180	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

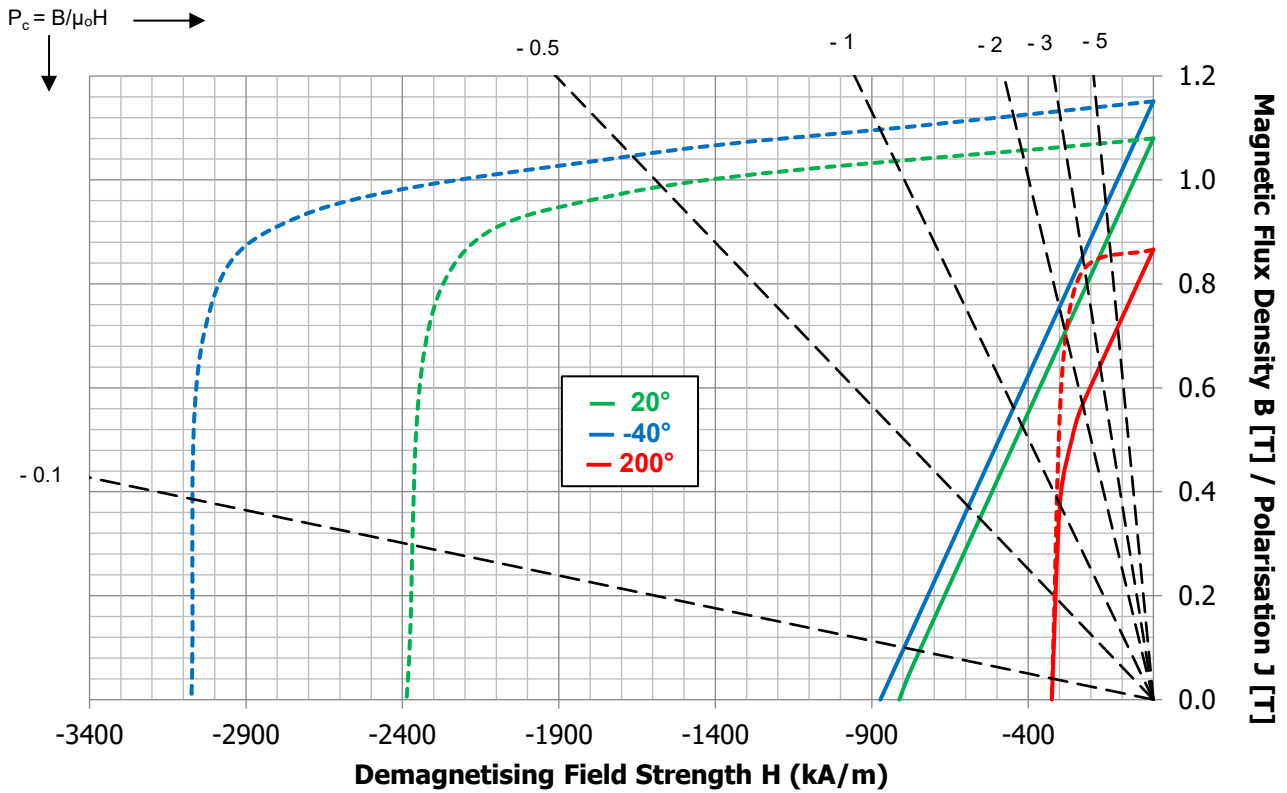
## EH- Grades

GUK Magnetic s Grade Code	Remanence $B_r$	Normal Coercivity $H_{cB}$	Intrinsic Coercivity $H_{cJ}$	Maximum Energy Product $(BH)_{max}$	Remanence Temperature Coefficient $\alpha(B_r)$	Intrinsic Coercivity Temperature Coefficient $\beta(H_{cJ})$	Maximum Operating Temperature $T_{max}$
	Minimum Value	Minimum Value	Minimum Value	Minimum Value	Minimum Typical Value	Minimum Typical Value	Maximum Value
	[mT]	[kA/m]	[kA/m]	[kJ/m <sup>3</sup> ]	[%/°C]	[%/°C]	[°C]
<a href="#">N30EH</a>	1080	812	2387	220	-0.11	-0.48	200
<a href="#">N33EH</a>	1130	820	2387	246	-0.11	-0.48	200
<a href="#">N35EH</a>	1170	836	2387	259	-0.11	-0.48	200
<a href="#">N38EH</a>	1200	899	2387	281	-0.11	-0.48	200
<a href="#">N40EH</a>	1250	915	2387	300	-0.11	-0.48	200
<a href="#">N42EH</a>	1270	971	2387	318	-0.11	-0.48	200
<a href="#">N45EH</a>	1320	971	2387	333	-0.11	-0.48	200

These are the most common grades. Please contact us for questions on other grades available at GUK Magnetics.

# Technical Datasheet: Neodymium N30EH – Anisotropic Sintered

## Demagnetisation Curve N30EH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

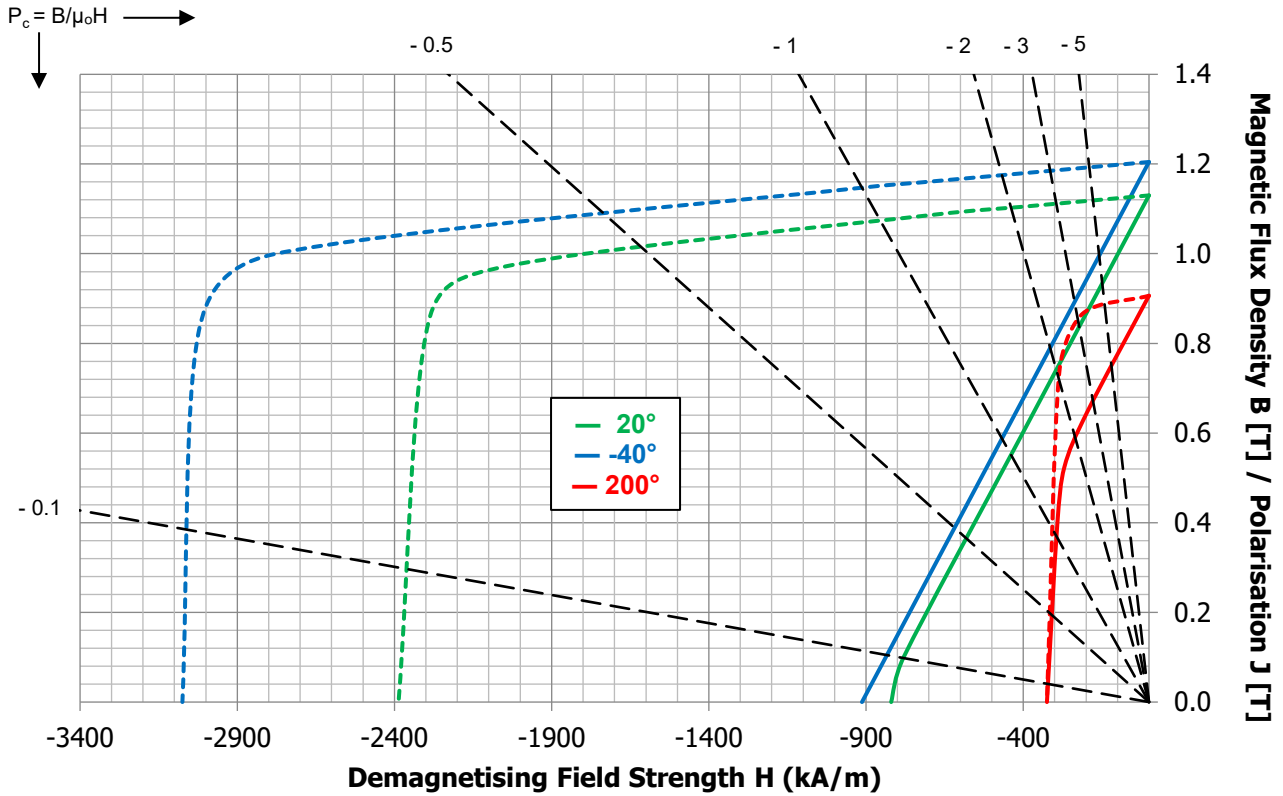
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.08	T
<b>H<sub>cB</sub></b>	min	812	kA/m
<b>H<sub>cJ</sub></b>	min	2387	kA/m
<b>(BH)<sub>ma</sub></b>	min	220	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.48	%/°C
<b>T<sub>max</sub></b>		200	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N33EH – Anisotropic Sintered

## Demagnetisation Curve N33EH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

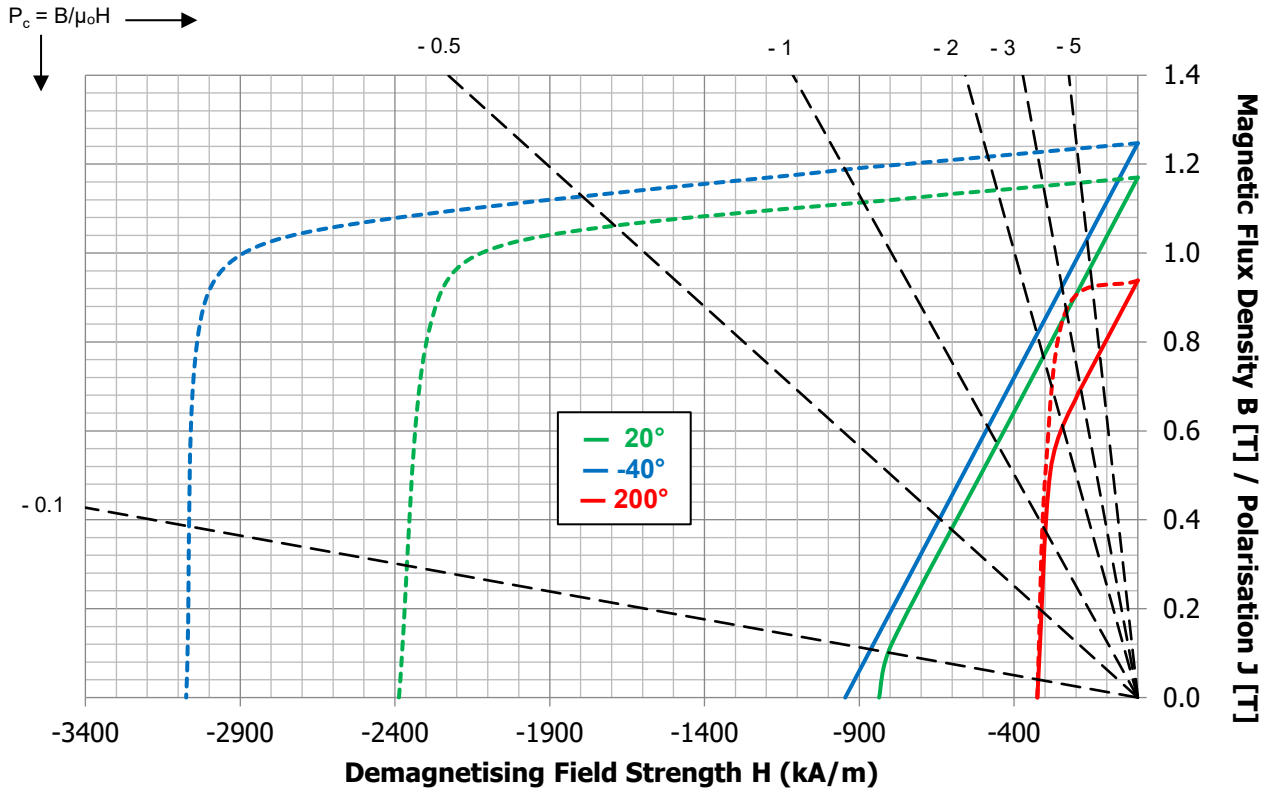
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.13	T
<b>H<sub>cB</sub></b>	min	820	kA/m
<b>H<sub>cJ</sub></b>	min	2387	kA/m
<b>(BH)<sub>ma</sub></b>	min	246	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.48	%/°C
<b>T<sub>max</sub></b>		200	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N35EH – Anisotropic Sintered

## Demagnetisation Curve N35EH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

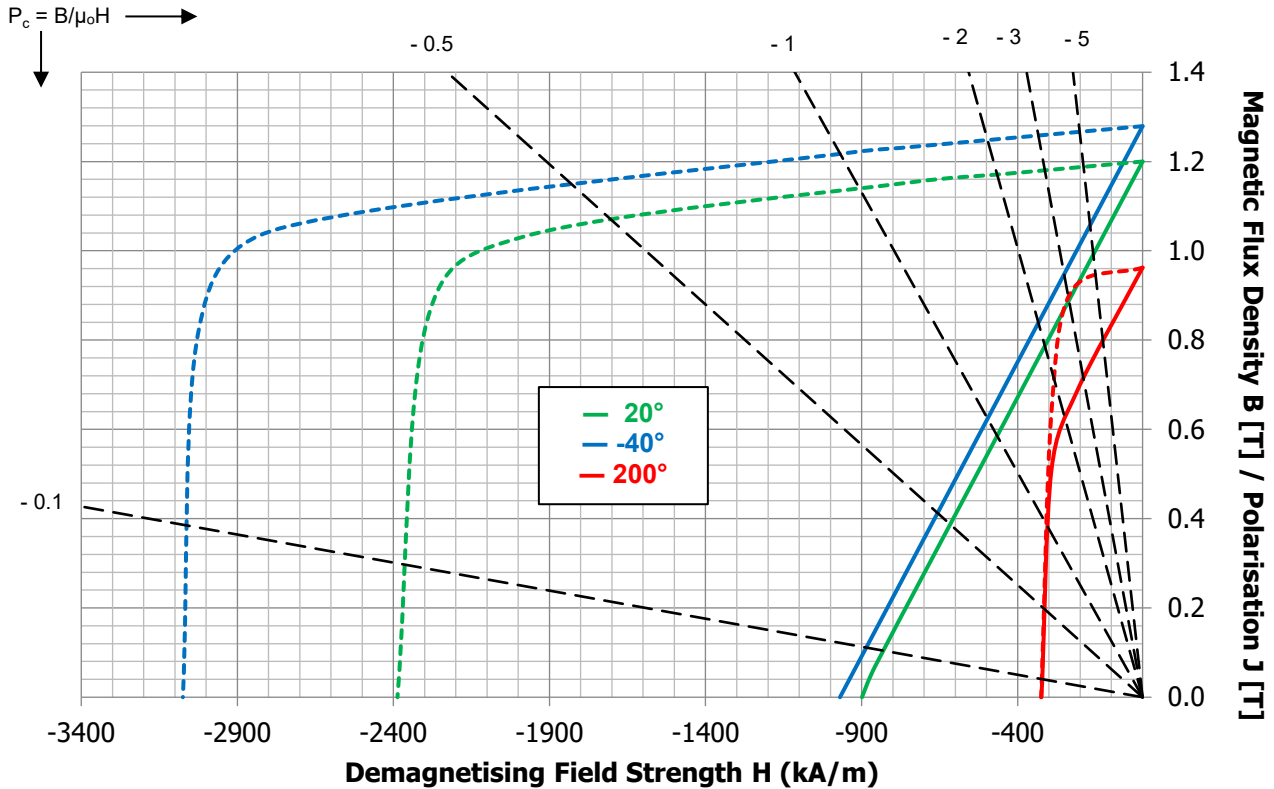
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.17	T
<b>H<sub>cB</sub></b>	min	836	kA/m
<b>H<sub>cJ</sub></b>	min	2387	kA/m
<b>(BH)<sub>ma</sub></b>	min	259	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.48	%/°C
<b>T<sub>max</sub></b>		200	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N38EH – Anisotropic Sintered

## Demagnetisation Curve N38EH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

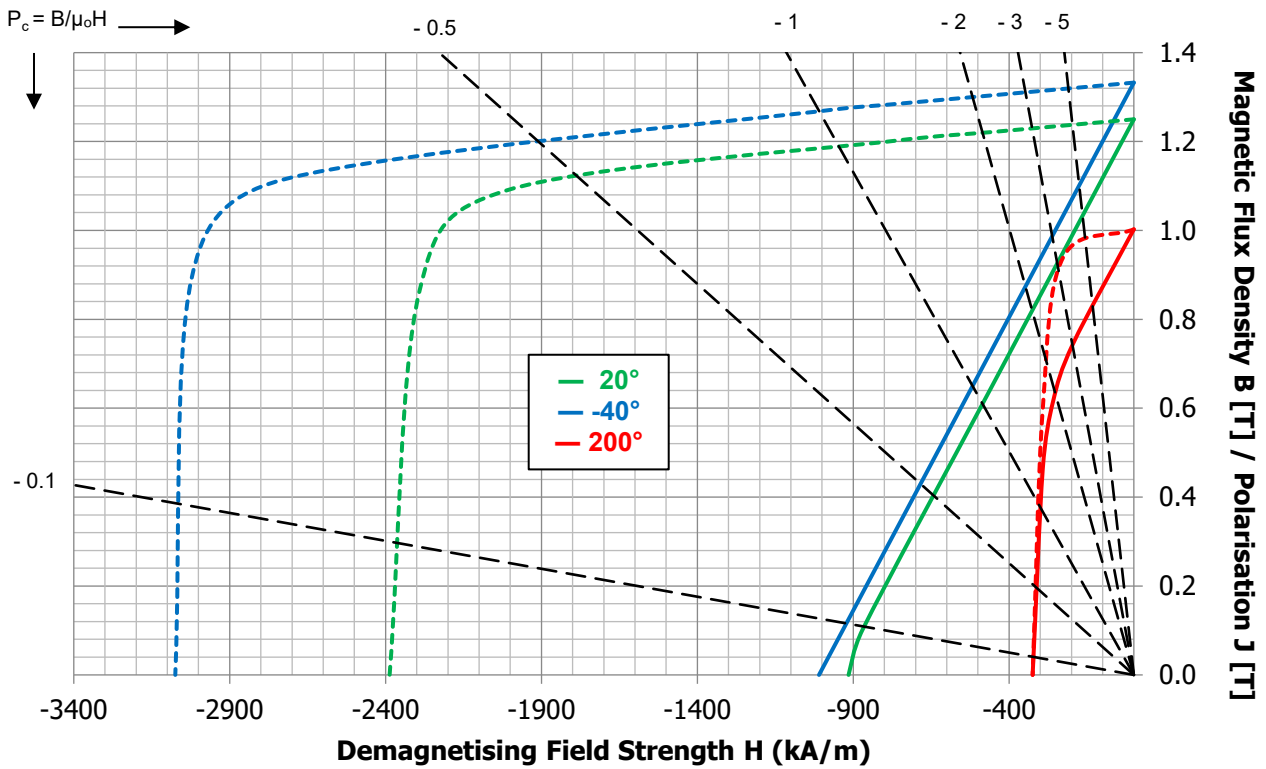
Magnetic Properties @20°C			
<b>Br</b>	min	1.20	T
<b>HcB</b>	min	899	kA/m
<b>HcJ</b>	min	2387	kA/m
<b>(BH)ma</b>	min	281	kJ/m <sup>3</sup>
<b>α(Br)</b>	min typ	-0.11	%/°C
<b>β(HcJ)</b>	min typ	-0.48	%/°C
<b>Tmax</b>		200	°C
<b>μr</b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N40EH – Anisotropic Sintered

## Demagnetisation Curve N40EH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

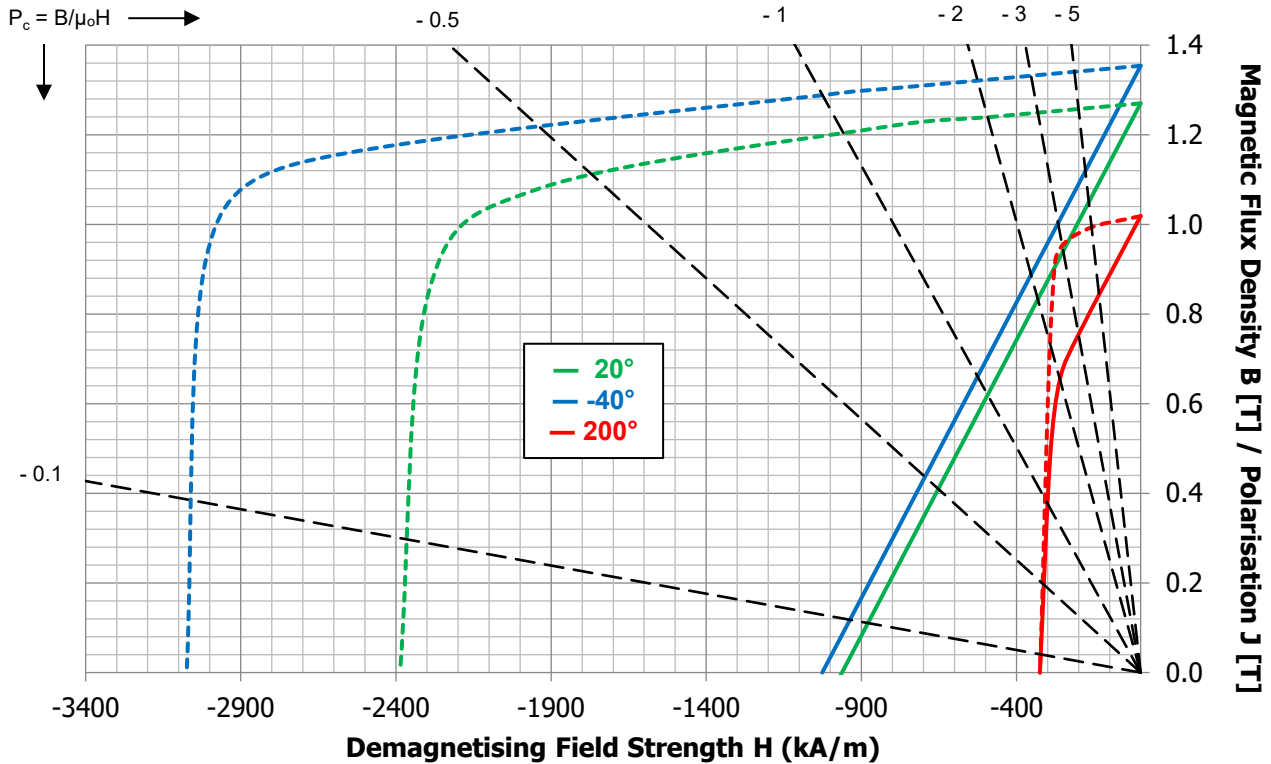
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.25	T
<b>H<sub>cB</sub></b>	min	915	kA/m
<b>H<sub>cJ</sub></b>	min	2387	kA/m
<b>(BH)<sub>ma</sub></b>	min	300	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.48	%/°C
<b>T<sub>max</sub></b>		200	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N42EH – Anisotropic Sintered

## Demagnetisation Curve N42EH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

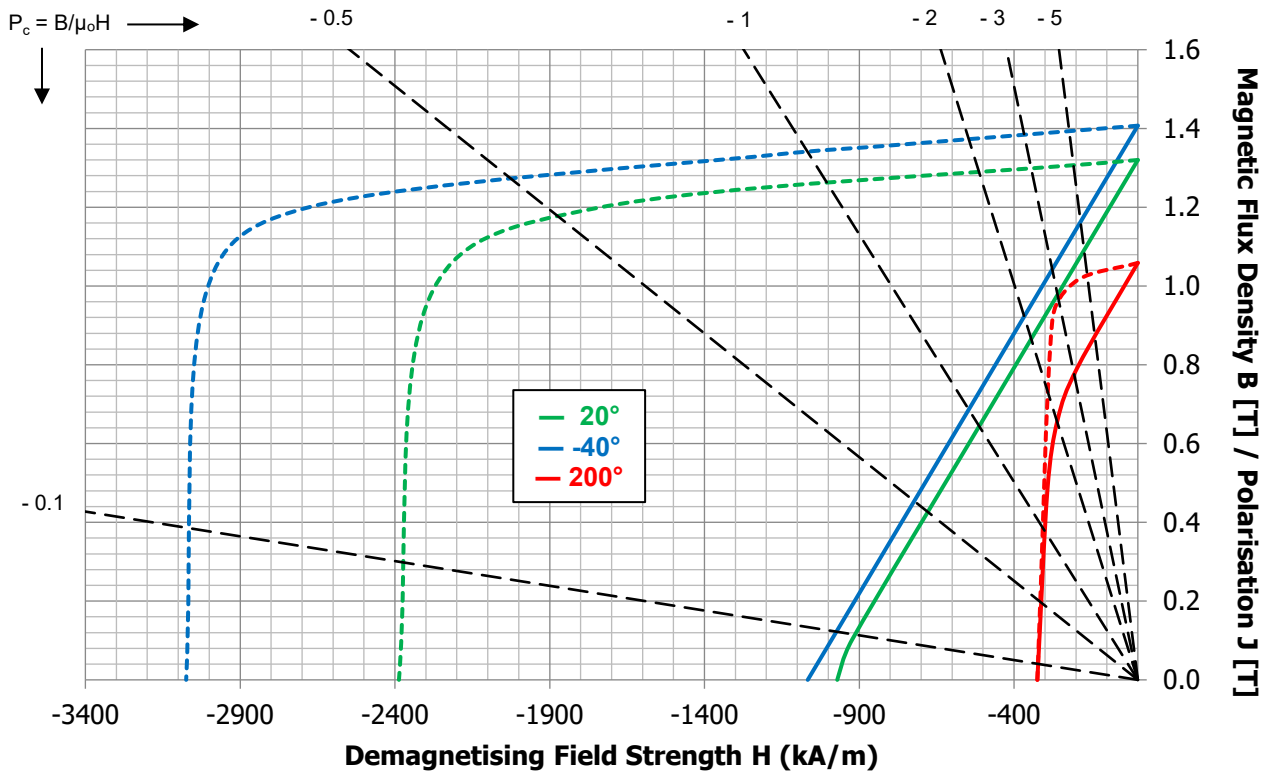
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.27	T
<b>H<sub>cB</sub></b>	min	971	kA/m
<b>H<sub>cJ</sub></b>	min	2387	kA/m
<b>(BH)<sub>ma</sub></b>	min	318	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.48	%/°C
<b>T<sub>max</sub></b>		200	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N45EH – Anisotropic Sintered

## Demagnetisation Curve N45EH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.32	T
<b>H<sub>cB</sub></b>	min	971	kA/m
<b>H<sub>cJ</sub></b>	min	2387	kA/m
<b>(BH)<sub>ma</sub></b>	min	333	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.48	%/°C
<b>T<sub>max</sub></b>		200	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

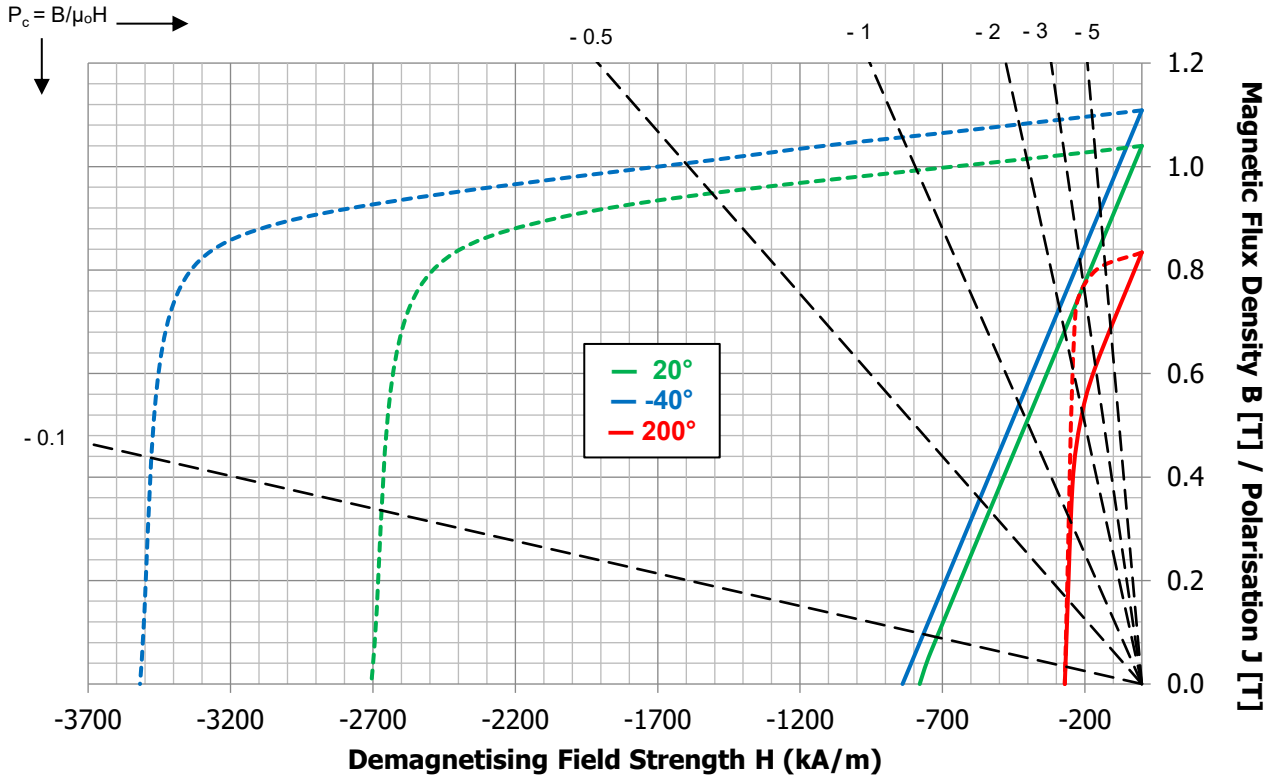
## AH-Grades

GUK Magnetic s Grade Code	Remanence $B_r$	Normal Coercivity $H_{cB}$	Intrinsic Coercivity $H_{cJ}$	Maximum Energy Product $(BH)_{max}$	Remanence Temperature Coefficient $\alpha(B_r)$	Intrinsic Coercivity Temperature Coefficient $\beta(H_{cJ})$	Maximum Operating Temperature $T_{max}$
	Minimum Value	Minimum Value	Minimum Value	Minimum Value	Minimum Typical Value	Minimum Typical Value	Maximum Value
	[mT]	[kA/m]	[kA/m]	[kJ/m <sup>3</sup> ]	[%/°C]	[%/°C]	[°C]
<a href="#">N28AH</a>	1040	780	2706	204	-0.11	-0.50	220
<a href="#">N30AH</a>	1080	812	2706	220	-0.11	-0.50	220
<a href="#">N33AH</a>	1140	812	2706	246	-0.11	-0.50	220
<a href="#">N35AH</a>	1170	883	2706	259	-0.11	-0.50	220
<a href="#">N38AH</a>	1200	923	2706	281	-0.11	-0.50	220
<a href="#">N40AH</a>	1250	923	2706	300	-0.11	-0.50	220
<a href="#">N42AH</a>	1280	923	2706	318	-0.11	-0.50	220

These are the most common grades. Please contact us for questions on other grades available at GUK Magnetics.

# Technical Datasheet: Neodymium N28AH – Anisotropic Sintered

## Demagnetisation Curve N28AH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

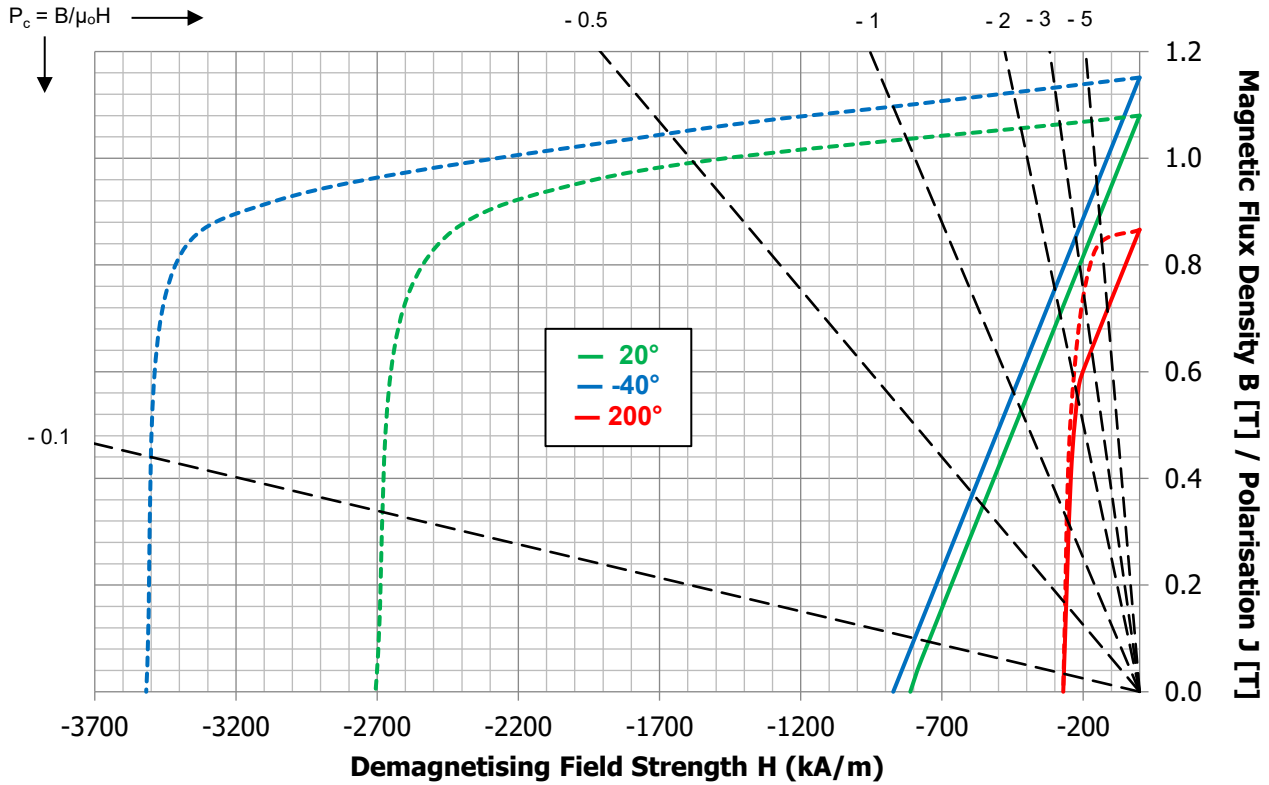
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.04	T
<b>H<sub>cB</sub></b>	min	780	kA/m
<b>H<sub>cJ</sub></b>	min	2706	kA/m
<b>(BH)<sub>ma</sub></b>	min	204	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.50	%/°C
<b>T<sub>max</sub></b>		220	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N30AH – Anisotropic Sintered

## Demagnetisation Curve N30AH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

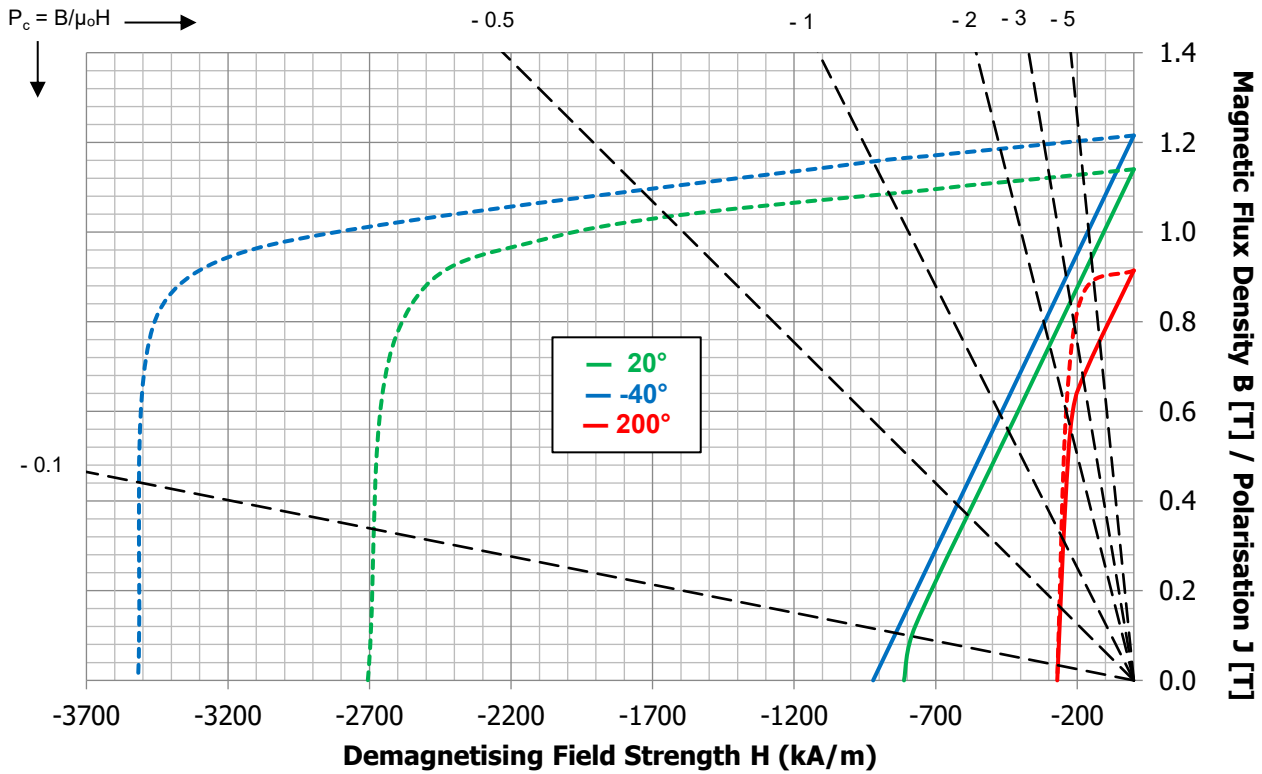
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.08	T
<b>H<sub>cB</sub></b>	min	812	kA/m
<b>H<sub>cJ</sub></b>	min	2706	kA/m
<b>(BH)<sub>ma</sub></b>	min	220	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.50	%/°C
<b>T<sub>max</sub></b>		220	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N33AH – Anisotropic Sintered

## Demagnetisation Curve N33AH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

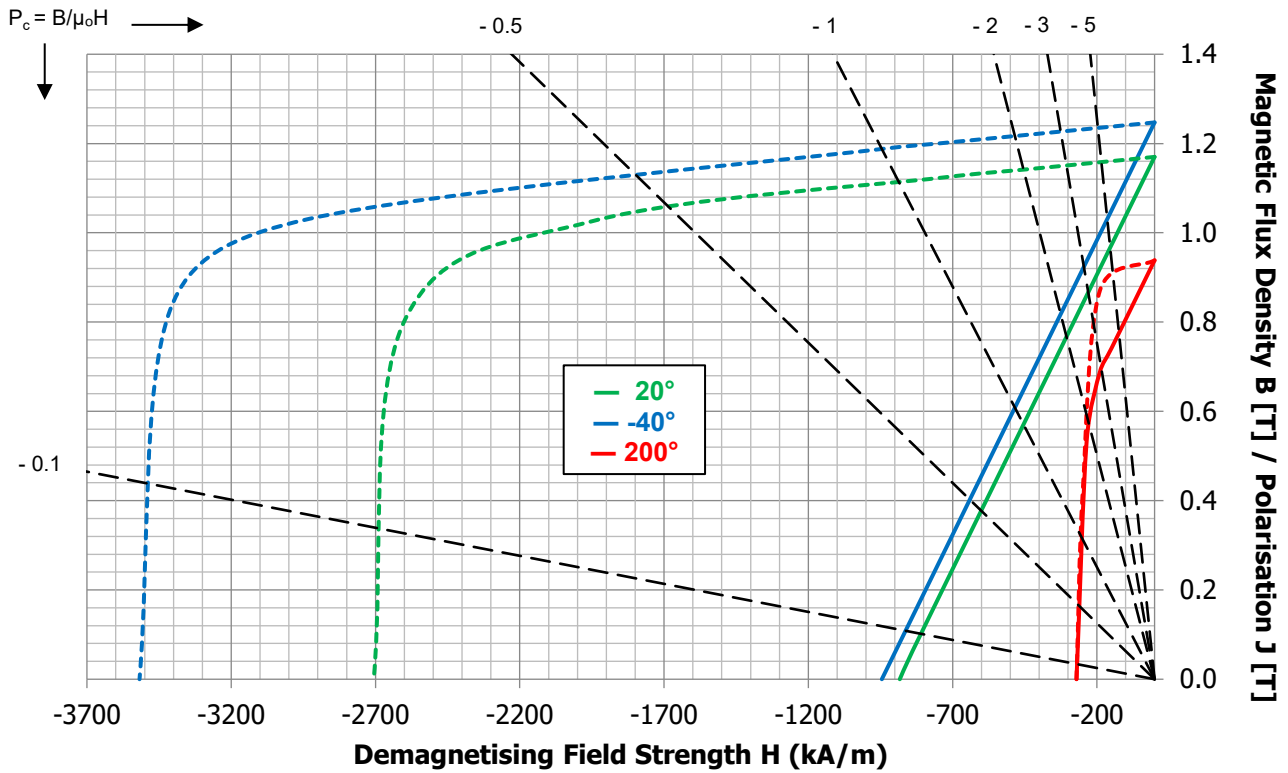
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.14	T
<b>H<sub>cB</sub></b>	min	812	kA/m
<b>H<sub>cJ</sub></b>	min	2706	kA/m
<b>(BH)<sub>ma</sub></b>	min	246	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.50	%/°C
<b>T<sub>max</sub></b>		220	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N35AH – Anisotropic Sintered

## Demagnetisation Curve N35AH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

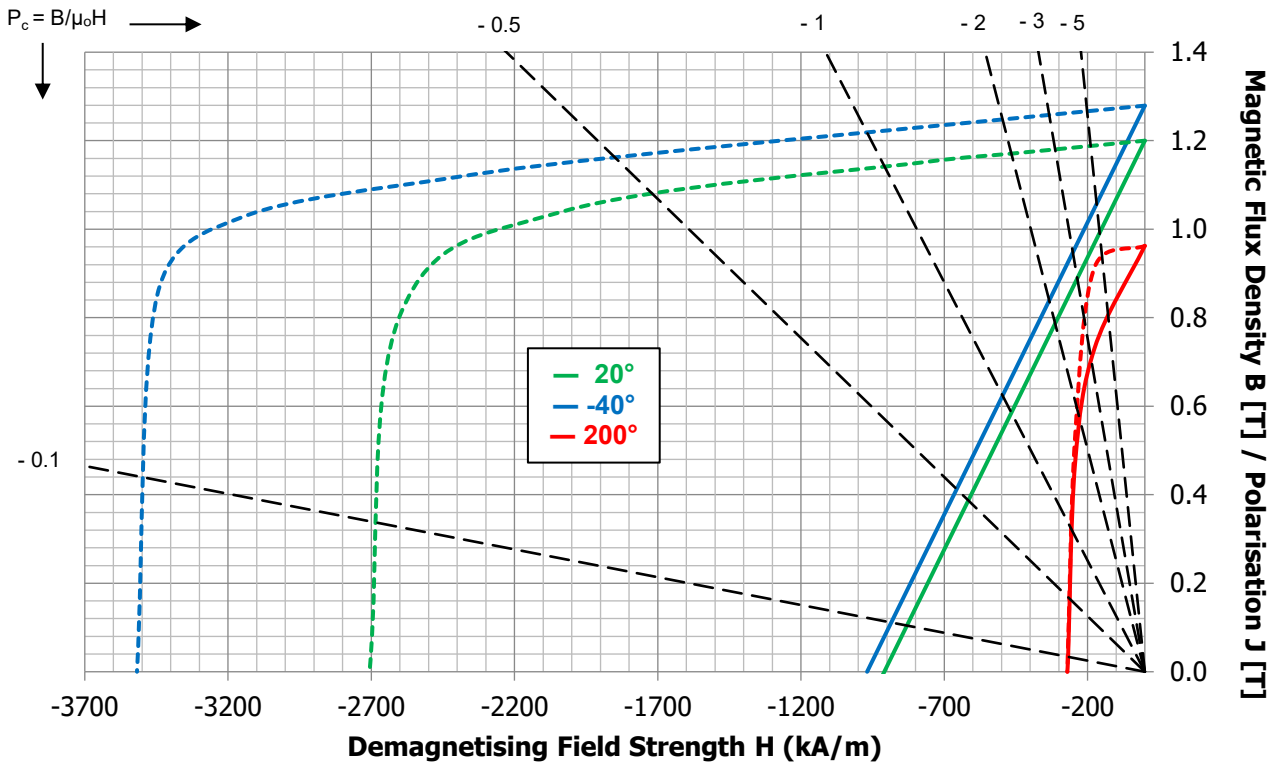
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.17	T
<b>H<sub>cb</sub></b>	min	883	kA/m
<b>H<sub>cj</sub></b>	min	2706	kA/m
<b>(BH)<sub>ma</sub></b>	min	259	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cj</sub>)</b>	min typ	-0.50	%/°C
<b>T<sub>max</sub></b>		220	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N38AH – Anisotropic Sintered

## Demagnetisation Curve N38AH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

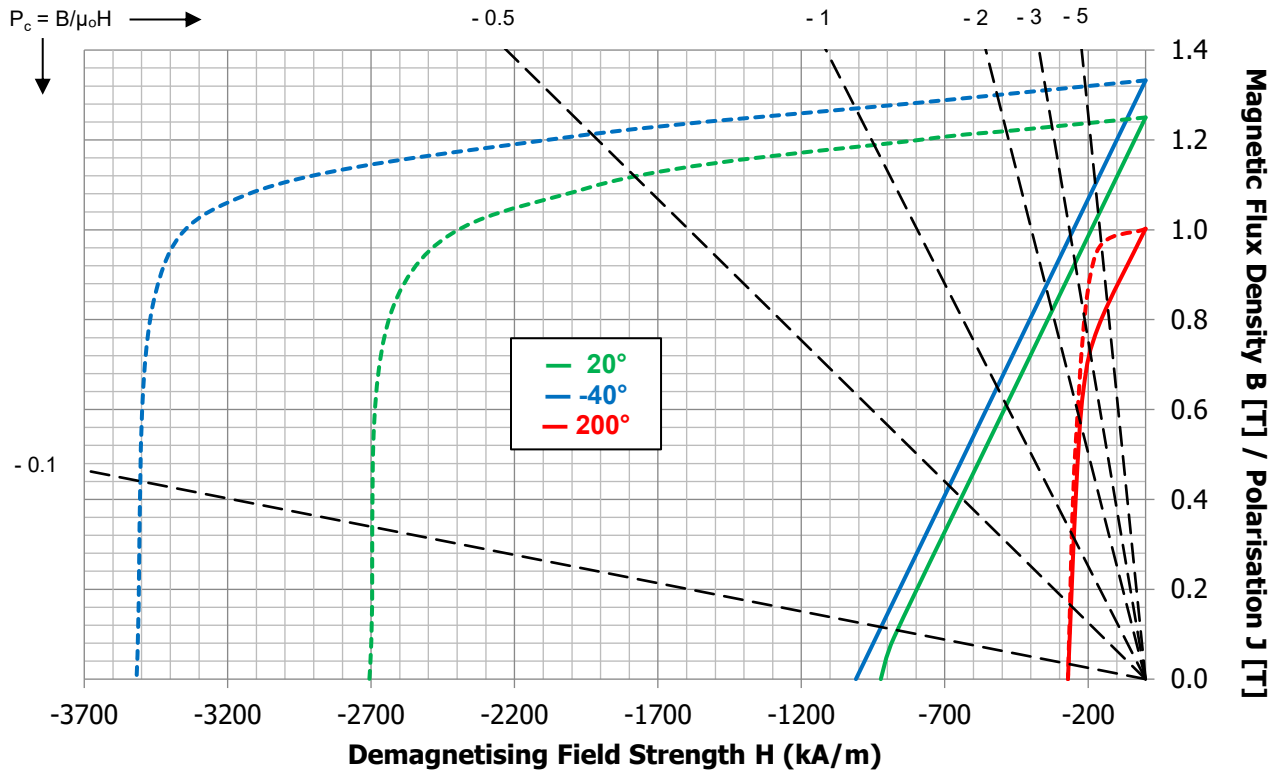
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.20	T
<b>H<sub>cB</sub></b>	min	923	kA/m
<b>H<sub>cJ</sub></b>	min	2706	kA/m
<b>(BH)<sub>ma</sub></b>	min	281	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.50	%/°C
<b>T<sub>max</sub></b>		220	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N40AH – Anisotropic Sintered

## Demagnetisation Curve N40AH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

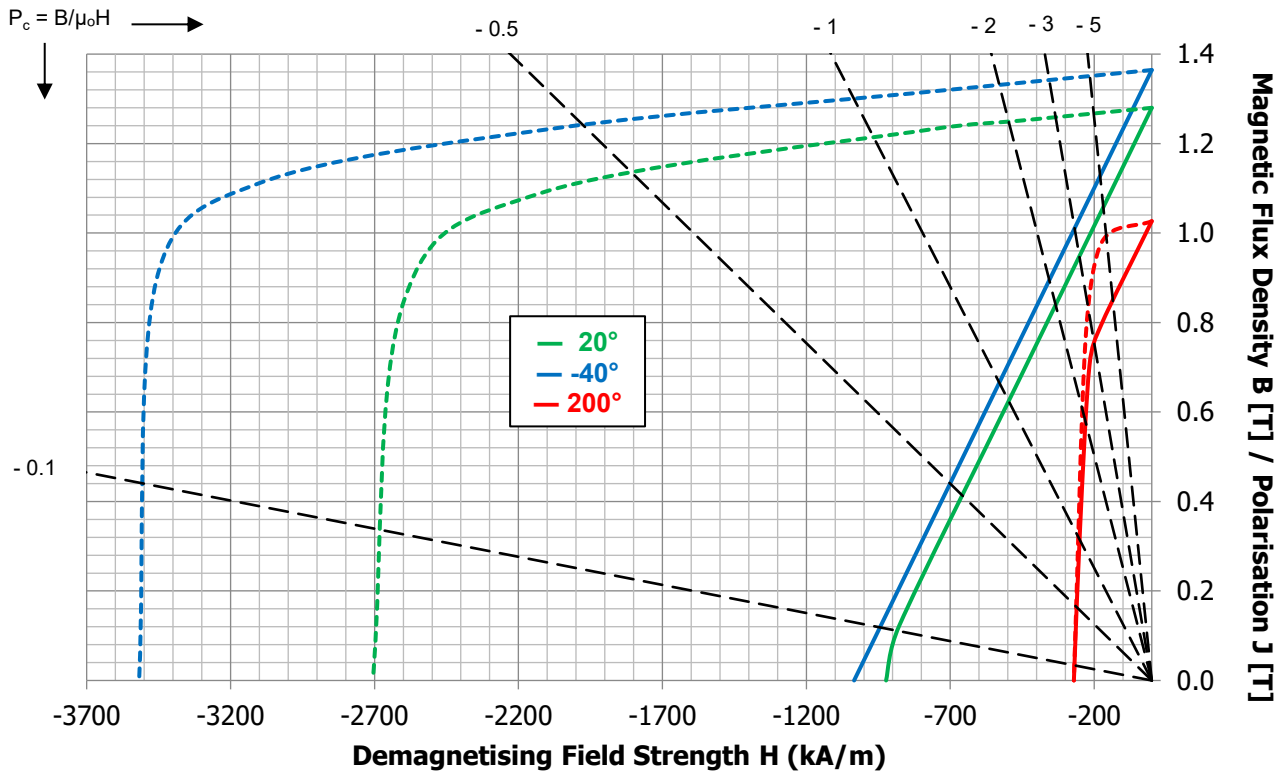
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.25	T
<b>H<sub>CB</sub></b>	min	923	kA/m
<b>H<sub>CJ</sub></b>	min	2706	kA/m
<b>(BH)<sub>ma</sub></b>	min	300	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>CJ</sub>)</b>	min typ	-0.50	%/°C
<b>T<sub>max</sub></b>		220	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N42AH – Anisotropic Sintered

## Demagnetisation Curve N42AH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.28	T
<b>H<sub>cB</sub></b>	min	923	kA/m
<b>H<sub>cJ</sub></b>	min	2706	kA/m
<b>(BH)<sub>ma</sub></b>	min	318	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.11	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.50	%/°C
<b>T<sub>max</sub></b>		220	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

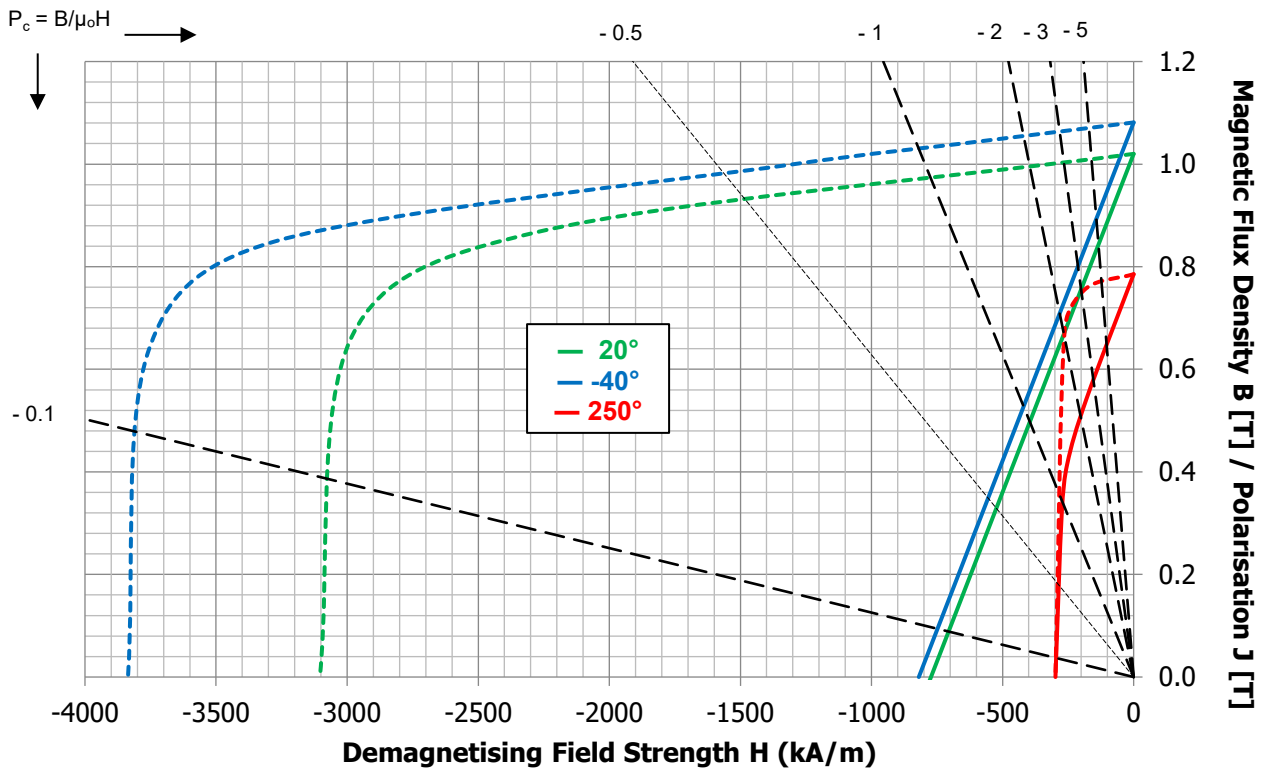
## VH- Grades

GUK Magnetic s Grade Code	Remanence $B_r$	Normal Coercivity $H_{cB}$	Intrinsic Coercivity $H_{cJ}$	Maximum Energy Product $(BH)_{max}$	Remanence Temperature Coefficient $\alpha(B_r)$	Intrinsic Coercivity Temperature Coefficient $\beta(H_{cJ})$	Maximum Operating Temperature $T_{max}$
	minimum value	minimum value	minimum value	minimum value	minimum typical value	minimum typical value	maximum value
	[mT]	[kA/m]	[kA/m]	[kJ/m <sup>3</sup> ]	[%/°C]	[%/°C]	[°C]
<a href="#">N28VH</a>	1020	780	3104	207	-0.10	-0.393	250
<a href="#">N30VH</a>	1080	812	3104	223	-0.10	-0.393	250
<a href="#">N33VH</a>	1130	812	3104	247	-0.10	-0.393	250
<a href="#">N35VH</a>	1170	883	3104	263	-0.10	-0.393	250
<a href="#">N38VH</a>	1220	923	3104	287	-0.10	-0.393	250

These are the most common grades. Please contact us for questions on other grades available at GUK Magnetics.

# Technical Datasheet: Neodymium N28VH – Anisotropic Sintered

## Demagnetisation Curve N28VH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

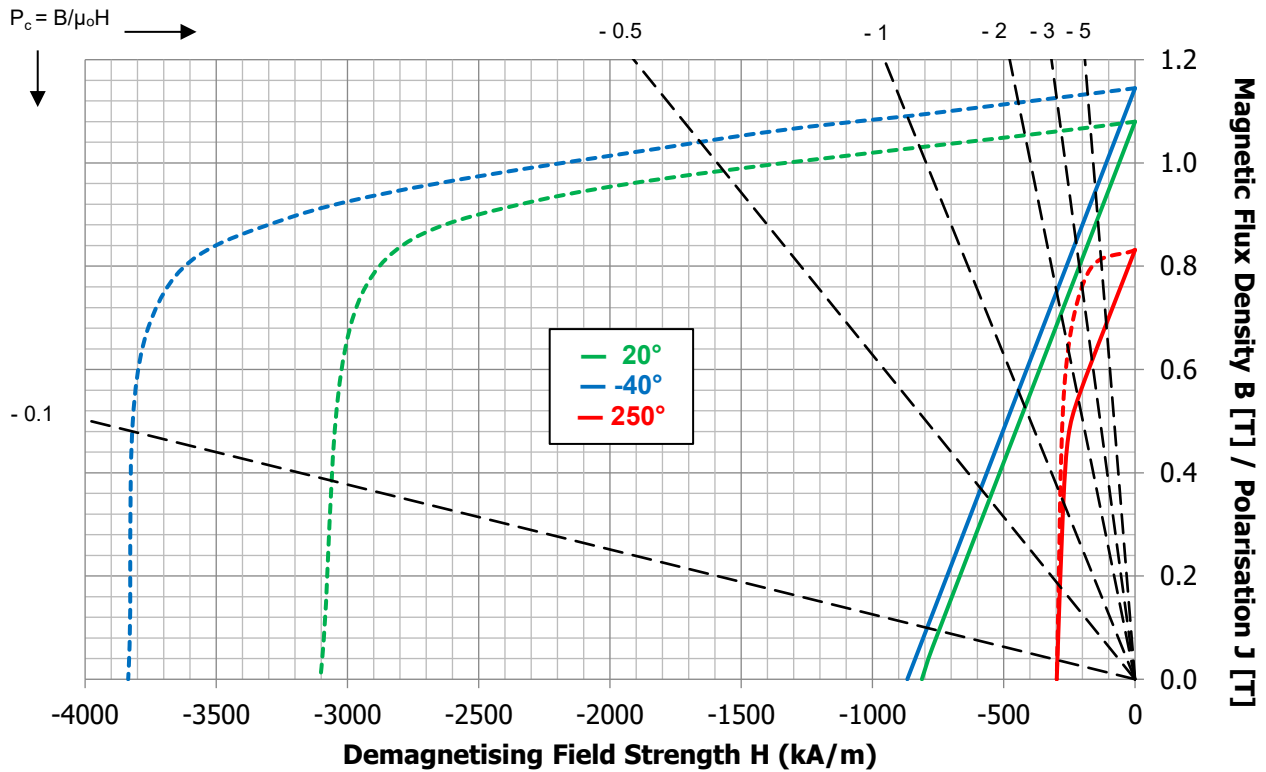
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.02	T
<b>H<sub>cB</sub></b>	min	780	kA/m
<b>H<sub>cJ</sub></b>	min	3104	kA/m
<b>(BH)<sub>ma</sub></b>	min	207	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.10	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.393	%/°C
<b>T<sub>max</sub></b>		250	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N30VH – Anisotropic Sintered

## Demagnetisation Curve N30VH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

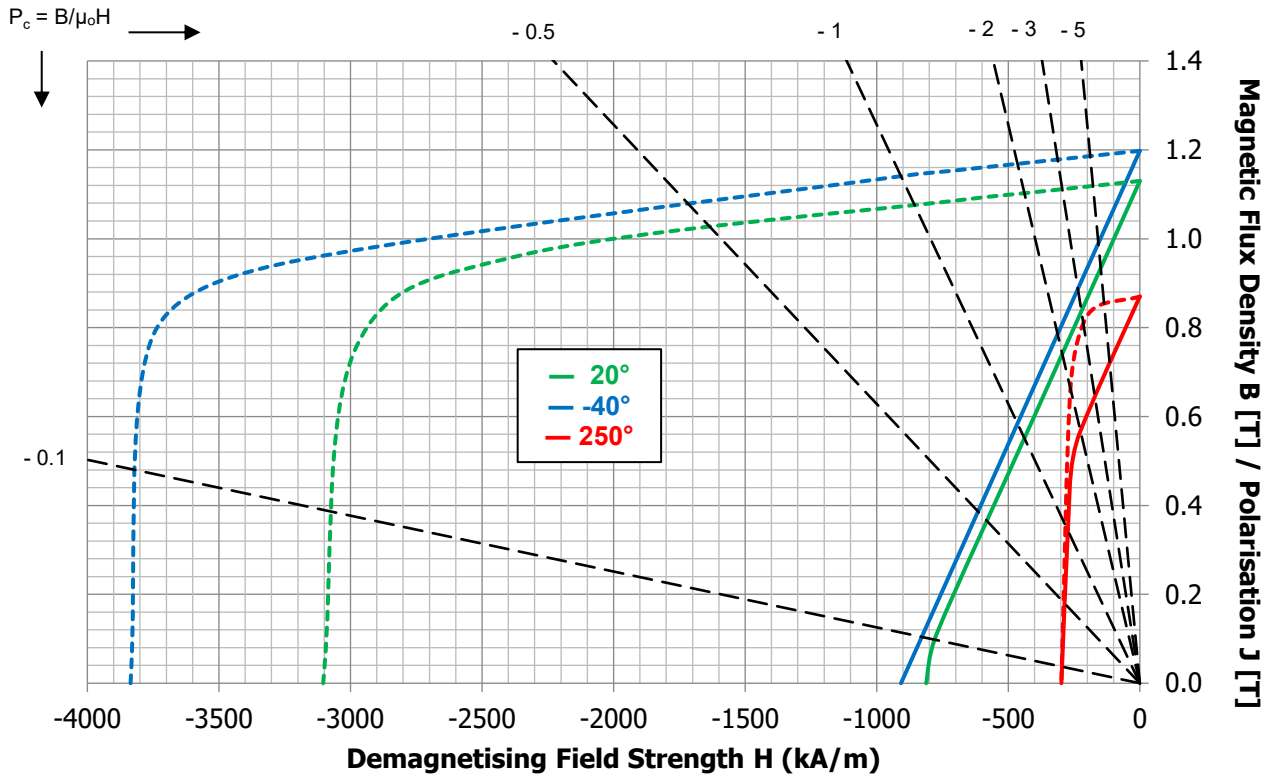
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.08	T
<b>H<sub>cB</sub></b>	min	812	kA/m
<b>H<sub>cJ</sub></b>	min	3104	kA/m
<b>(BH)<sub>ma</sub></b>	min	223	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.10	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.393	%/°C
<b>T<sub>max</sub></b>		250	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N33VH – Anisotropic Sintered

## Demagnetisation Curve N33VH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

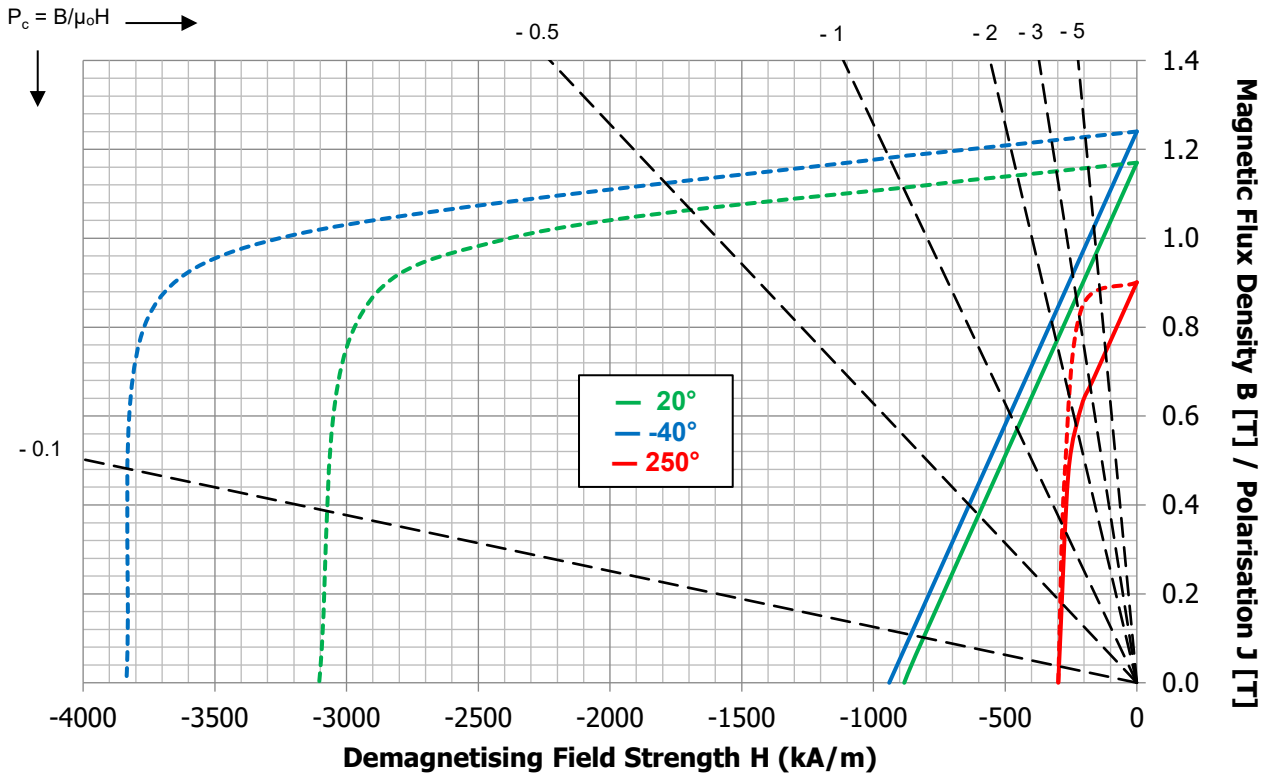
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.13	T
<b>H<sub>cb</sub></b>	min	812	kA/m
<b>H<sub>cj</sub></b>	min	3104	kA/m
<b>(BH)<sub>ma</sub></b>	min	247	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.10	%/°C
<b>β(H<sub>cj</sub>)</b>	min typ	-0.393	%/°C
<b>T<sub>max</sub></b>		250	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N35VH – Anisotropic Sintered

## Demagnetisation Curve N35VH



Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

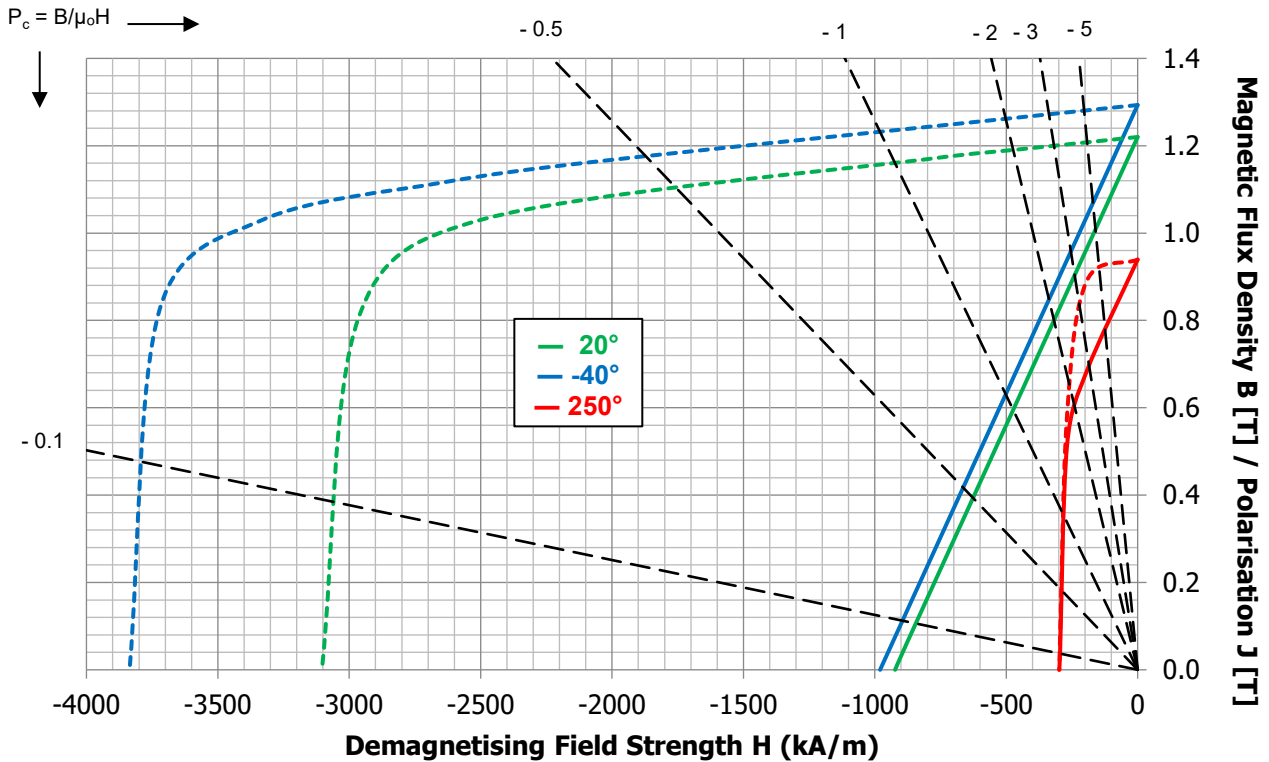
Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.17	T
<b>H<sub>cB</sub></b>	min	883	kA/m
<b>H<sub>cJ</sub></b>	min	3104	kA/m
<b>(BH)<sub>ma</sub></b>	min	263	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.10	%/°C
<b>β(H<sub>cJ</sub>)</b>	min typ	-0.393	%/°C
<b>T<sub>max</sub></b>		250	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation

# Technical Datasheet: Neodymium N38VH – Anisotropic Sintered

## Demagnetisation Curve N38VH

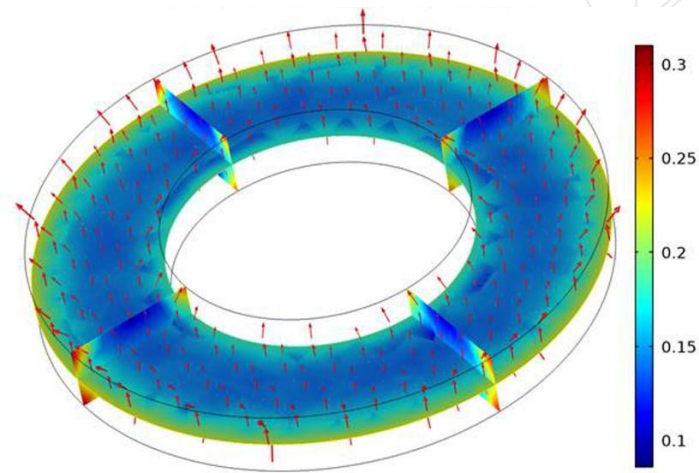


Solid lines represent magnetic flux densities. Dashed lines represent polarisations. The curves here are estimates obtained from data available from the current GUK Magnetics grade system (Available on the website. See also the magnetic properties below). On request, actual measurements of demagnetisation curves can be obtained. For that, contact us on the address below.

Magnetic Properties @20°C			
<b>B<sub>r</sub></b>	min	1.22	T
<b>H<sub>cb</sub></b>	min	923	kA/m
<b>H<sub>cj</sub></b>	min	3104	kA/m
<b>(BH)<sub>ma</sub></b>	min	287	kJ/m <sup>3</sup>
<b>α(B<sub>r</sub>)</b>	min typ	-0.10	%/°C
<b>β(H<sub>cj</sub>)</b>	min typ	-0.393	%/°C
<b>T<sub>max</sub></b>		250	°C
<b>μ<sub>r</sub></b>	typ	1.05	-

Physical & Mechanical Properties @20°C			
Density	typ	7400 - 7800	kg/m <sup>3</sup>
Vickers Hardness	typ	500 - 700	HV
Modulus of Elasticity / Young's modulus	typ	140 - 200	GPa
Flexural / bending strength	typ	100 - 400	MPa
Compressive strength	typ	600 - 1100	MPa
Tensile strength / ultimate strength	typ	74 - 90	MPa
Electrical resistivity	typ	1.1 - 1.7	μΩm
Specific heat capacity	typ	350 - 550	J/(kg K)
Thermal conductivity	typ	5 - 15	W/(m K)
Coefficient of linear thermal expansion,    DOM*	typ	3 - 9	10 <sup>-6</sup> /K
Coefficient of linear thermal expansion, ⊥ DOM*	typ	-3 - 0	10 <sup>-6</sup> /K

\* DOM = Direction Of Magnetisation



GUK Magnetics offers a wide range of services with regards to the design and selection of the appropriate magnet for your specific application. For instance, we apply magnet calculations and FEM simulations to quickly identify the best magnet for your product.

The possibilities with magnet technology are endless, which is why it can quickly become confusing. GUK Magnetics has more than 60 years of experience in the world of magnetism and is happy to help you with advice and a range of services:

- FEM simulation & magnet calculations: gain quick insight into the operation of your design.
- Prototyping & samples: tangible magnet technology based on your requirements.
- Engineering: development of magnet assemblies and components.
- Quality control: critical properties tested and validated in our own measurement lab.
- Stock management service: delivery of your magnets on demand through our modern warehouse.

You can choose whatever form of support you want. This guarantees you the right magnet for your specific application.