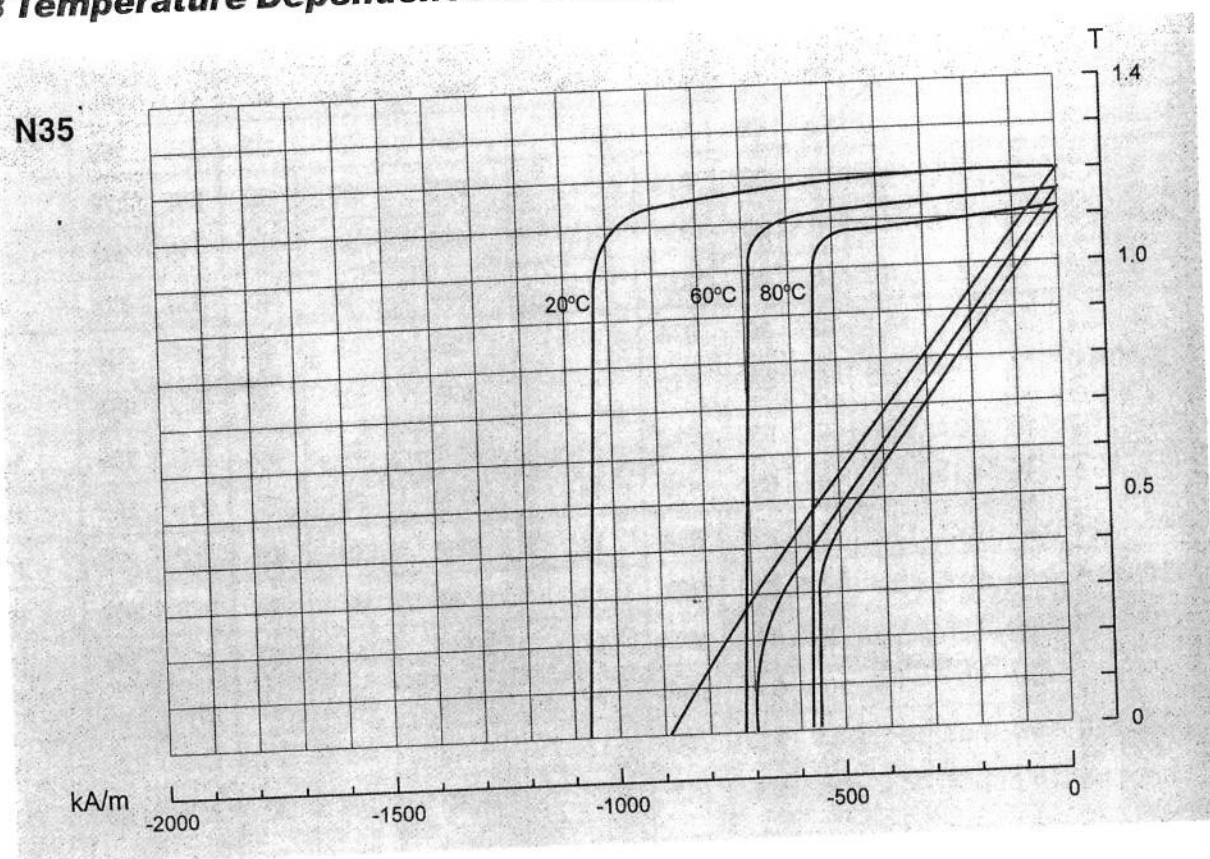


### 1.1-3 Temperature Dependence of Demagnetization Curves



### 1.1-2 Characteristic magnetic properties at room temperature (20°C)

| Material<br>Code | Remanence Br |      |      |      | Coercivity Hcb |      |      |     | Intrinsic Coercivity Hcj |      | Max. Energy Product |     |       |     | Max.Working Temp. |
|------------------|--------------|------|------|------|----------------|------|------|-----|--------------------------|------|---------------------|-----|-------|-----|-------------------|
|                  | kGs          |      | T    |      | kOe            |      | kA/m |     | kOe                      | kA/m | MGOe                |     | kJ/m³ |     | °C(L/D=0.7)       |
|                  | Typ.         | Min  | Typ. | Min  | Typ.           | Min  | Typ. | Min | Min                      | Min  | Typ.                | Min | Typ.  | Min |                   |
| N35              | 12.2         | 11.7 | 1.22 | 1.17 | 11.2           | 10.5 | 891  | 836 | 12                       | 955  | 35                  | 33  | 279   | 263 | 80                |

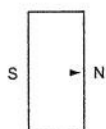
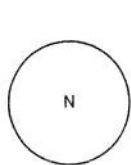
### 1.1-4 Physical properties at room temperature (20°C)

|                     |                                         |                              |                                           |
|---------------------|-----------------------------------------|------------------------------|-------------------------------------------|
| Temp. Coeff. of Br: | -0.11%/°C (20-100°C)                    | Temp. Coeff. of iHc:         | -0.60%/°C (20-100°C)                      |
| Density:            | 7.4-7.6g/cm <sup>3</sup>                | Electrical resistivity:      | 144 μ Ω .cm                               |
| Vickers Hardness:   | 570Hv                                   | Flexural Strength:           | 25kg/mm                                   |
| Tensile strength:   | 8.0kg/mm <sup>2</sup>                   | Coeff. of Thermal Expansion: | 4 x 10 <sup>-6</sup> /°C                  |
| Specific Heat:      | 0.12kCal/(kg.°C)                        | Thermal Conductivity:        | 7.7kcal/(m.h.°C)                          |
| Young's Modulus:    | 1.6 x 10 <sup>11</sup> N/m <sup>2</sup> | Rigidity:                    | 0.64N/m <sup>2</sup>                      |
| Poisson's Ratio:    | 0.24                                    | Compressibility:             | 9.8 x 10 <sup>-12</sup> m <sup>2</sup> /N |
| Curie Temperature:  | 310-340°C                               |                              |                                           |

### 1.1-5 Surface Protection and coatings

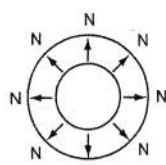
| Surface          | Type        | Minimal layer thickness | Surface color     | Remarks                                      |
|------------------|-------------|-------------------------|-------------------|----------------------------------------------|
| Passivation      |             | ≤ 1 μ                   | Silver grey       | Temperary Protection                         |
| Nickel coating   | Ni+Ni       | 10-20 μ                 | Silver semibright | Excellent resistance to humid atmosphere     |
|                  | Ni+Cu+Ni    |                         |                   | Superior resistance to humid atmosphere      |
| Zinc coating     | Zn          | 8-20 μ                  | Blue whiteshining | Good resistance to salt spray                |
|                  | C-Zn        |                         | Colour shining    | Excellent resistance to salt spray           |
| Tin coating      | Ni+Cu+Sn    | 15-20 μ                 | Silver semibright | Superior resistance to humid atmosphere      |
| Gold coating     | Ni+Cu+Au    | 10-20 μ                 | Gold shining      | Superior resistance to humid atmosphere      |
| Copper coating   | Ni+Cu       | 10-20 μ                 | Gold shining      | Temporary treatment                          |
| Epoxy            | Ni+Cu+Epoxy | 15-25 μ                 | Black             | Excellent climatic and salt spray resistance |
|                  | Zn+Epoxy    |                         |                   |                                              |
| Chemical Coating | Ni          | 10-20 μ                 | Silver semibright | Excellent resistance to humid atmosphere     |

### 1.1-6 Types of Magnetization

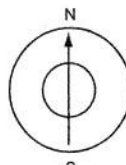


axial

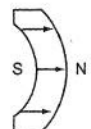
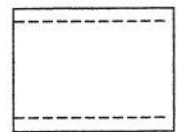
(also multi-poles)



radial



diametral



diametral