Bar
Corrosion application

NY800, 810 (800H) and 811 (800HT) are Fe-Ni-Cr (Ti+Al) alloys widely used for construction of equipment requiring corrosion resistance, heat resistance and strength. Phy800 is mainly used in general corrosion resistance to many aqueous environment. At elevated temperatures it offers good resistance to oxidation, carburization, and sulfidation along with rupture and creep strength. For applications requiiring greater resistance to stress rupture and creep, especially for T > 816℃, Phy810 or 811 are used.

1. Chemical content

UNS N08800, UNS N08810 and UNS N08811
Wr 1.4876, Wr 1.4958, Wr 1.4959

	Phy800	Phy810	Phy811
Ni	30 - 35	30 - 35	30 – 35
Cr	19 – 23	19 – 23	19 – 23
Fe	> 39,5	> 39,5	> 39,5
C	< 0,10	0,05 – 0,1	0,06 – 0,1
Al	0,15 – 0,60	0,15 – 0,60	0,15 – 0,60
Ti	0,15 – 0,60	0,15 – 0,60	0,15 – 0,60
Al+Ti	0,30 – 1,20	0,30 – 1,20	0,30 – 1,20

2. Applications

- Chemicals Industries (Nitric acid,…)
- Petrochemical processing
- Heat exchanger and piping system)
- Nuclear power plant (steam generator tubing,…)
- Sheathing of electric heating elements

Standards relative to these applications :
ASTM B408 or B564
AMS 5766

3. Shapes – Tolerances – Destinations

Round bars

Section	**Ø 4 to Ø 20mm**	**Ø 20 to Ø 140mm**	**Ø 140 to Ø 325mm**
Process	Cold bars	Hot-rolled bars	Forged bars
Surface Conditions	Raw, rectified, chamfrened	**Peeled**, rectified, polished, roller burnished, raw	**Peeled**, ground, rectified, polished, raw
Length	3 to 4m	3 to 6m	
Weight	min 400Kg	min 1000Kg	
Packaging	Wooden box or narrow strapping	Wooden box or narrow strapping	Secured package
Tolerances	Drawn straightened and rectified h9, Ra < 1,2µm	Peeled + roller burnished h11, Ra < 3,2µm	
Ground		+/- 3mm	+/- 3mm
Peeled (Ra < 6,3µm)		-0/+0,8mm for diameter < 80mm -0/+1,2mm for diameter > 81mm	- 0 / +3mm
Straightness	< 1mm/m	< 4,2mm/m	< 4,2mm/m
Uses	Bars for machining	Bars for machining or hot-transformation	
Customer processes used in manufacturing finished parts	Machining, free-cutting	Machining, forging, stamping, hot-rolling, drop forging, ring beking, drawing, upsetting, ring rolling,…	

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3. Shapes – Tolerances – Destinations

Square bars	
Section	**80x80mm to 265x265mm**
Process	**Bloomed** (up to 120x120mm) or forged
Surface Conditions	Ground
Length	3 to 6m
Weight	min 1000Kg
Tolerances	+/- 3mm
Straightness	10mm/m
Uses	**Bars for hot-transformation only**
Customer processes used in manufacturing finished parts	Forging, stamping, drop forging, ring becking, drawing, upsetting, ring rolling, hot-rolling, …

Others shapes : Please consult us.

4. Certificate

Certificate 10204-3.1
Chemical composition according to relevant standards.

Bars for hot-transformation :
Ultrasonic test according to the norm EN10308

Bars for other applications :
Condition and tests according to specified standard

The data enclosed in this document are only given as indicative values and correspond to our standard product. Different specific requirement are subject to discussion and formal approval by Aperam Alloys Imphy. For further information or special request, please contact us.

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