

# Special Stainless Steels Wire Rods



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Trade Names	Chemical Analysis										Standards			Main Applications
	C	Si	Mn	Ni	Cr	Mo	Cu	S	P	Others	AWS	WNR	Other	
<b>Welding grades</b>														
Phyweld® 309LSI	0.020	0.65 1.00	1.0 2.4	12.0 14.0	23.0 25.0	0.75	0.75	0.020	0.025	N < 0.10	AWS SFA 5.9 ER 309LSI UNS S30988	1.4332		<b>Welding:</b> Used for welding of furnace, salt bath or all kind of heating systems very good oxidation resistance at temperature till 900°C associated with very good general corrosion resistance. <b>Welding:</b> dissimilar joints between stainless and low alloyed steels. Surfacing of low alloyed steels. <b>Weld metal:</b> improved corrosion resistance and mechanical properties compared with stainless steel 316L
Phyweld® 309LMO	0.03	0.30 0.65	1.00 2.50	14.0 15.0	21.0 23.0	2.0 3.0	0.75	0.030	0.030	N < 0.10	close to AWS SFA 5.9 ER 309LMO UNS S30986	1.4337	EN 12072 29 9	<b>Welding:</b> Duplex steel with high mechanical properties. Offers a very large application field as welding of tools steels, springs steels, high temperature resistant steels or other duplex steels. <b>Weld metal:</b> Very good wear and wet corrosion resistance as sulfuric environment of the paper industry
Phyweld® 312	0.14	0.30 0.55	1.1 2.4	8.7 10.3	28.8 31.2	0.75	0.75	0.020	0.030		AWS SFA 5.9 ER 312 UNS S31380	modified 1.4462	EN 12072 22 9 3 L	<b>Welding:</b> Over-alloyed duplex steel initially for welding of Uranium 45N. <b>Weld metal:</b> Due to its high Mo and Cr contents, also used for its very good resistance to pitting and stress corrosion cracking in environments such as chloride, Chemical, acid transports, offshore, paper industries...
Phyweld® 45N	0.030	1.00	2.00	8.00 10.0	22.0 24.0	2.5 3.5	0.015	0.030	0.030	N 0.10 / 0.20	AWS SFA 5.9 ER 2209 UNS S39209	1.4507	EN 10088 X2CrNiMo- CuNi25-6-3	<b>Welding:</b> Over-alloyed duplex steel suitable for welding or joining of every duplex steels but also for joining them with carbon steels or low alloyed steels. See water systems: production and transport of phosphoric acid, paper offshore or depollution industries...
Phyweld® 52N	0.030	0.70	2.00	6.00 7.50	24.0 26.0	3.00 4.00	1.00 2.50	0.015	0.035	N 0.20 / 0.30	AWS SFA 5.9 ER 2553 UNS S39553	2.4660	Co 1.50 Cb 8 x C 1.00	<b>Welding:</b> Of all duplex and superduplex steels when the highest possible corrosion resistance is required <b>Weld metal:</b> excellent resistance to intergranular corrosion, pitting and stress corrosion cracking <b>Welding:</b> austenitic stainless steel by all practices such as gas tungsten arc and gas metal arc. <b>Weld metal :</b> compared with ER320, the lower C, Si, P, and S levels & controlled Nb and Mn reduce the cracking tendency of austenitic stainless steel weld metals, maintaining the corrosion resistance.
Phyweld® 25-9-4	0.030	1.00	2.50	8.00 10.5	24.0 27.0	2.50 4.50	1.50	0.020	0.030	N 0.20 / 0.30 W < 1.0	AWS SFA 5.9 ER 2594			
Phyweld® 920SLR	0.025	0.15	2.00	32.0 36.0	19.0 21.0	2.00 3.00	3.00 4.00	0.015	0.015		AWS SFA 5.9 ER 320LR UNS N08022			
<b>Other applications</b>														
PHY 218	0.10	3.50 4.50	7.00 9.00	8.00 9.00	16.0 18.0	0.75	0.75	0.030	0.030	N 0.08 / 0.18	AWS SFA 5.9 ER 218 UNS S21800 S21880	1.4539		Anti-galling and wear resistance, high temperature oxidation resistance. Manufacturing of conveyor belts, fasteners, fittings, shafts, pins, bearings, wear rings
PHY 904LN	0.02	0.70	2.00	24.0 26.0	19.0 21.0	4.00 5.00	1.20 2.00	0.010	0.030	N < 0.15		1.4455	EN 12072 20 25 5 CuL	Very good general corrosion resistance largely better than AISI 316L especially in sulfuric or phosphoric environments. Also used in chemical and offshore industry for a better resistance to pitting and stress corrosion cracking than classical austenitic stainless steels
PHY 4455	0.030	0.95	6.10 8.90	15.0 16.3	19.0 21.3	2.60 3.40		0.020	0.030	N 0.12 / 0.20	UNS S30400	1.4307 1.4301	EN 12072 20 16 3 MnL	Its high nitrogen content confers this special stainless steel a very good stability and make it suitable down to 4K for cryogenic application.
PHY 304LHP	0.030	0.75	2.00	8.00 10.5	18.0 19.5			0.015	0.045	N < 0.10		1.4404		The vacuum remelting operation applied at this austenitic stainless steel makes it suitable for all kinds of general medical application as orthodontic uses, catheter or small parts.
PHY 316LHP	0.030	1.00	2.00	10.0 13.0	16.5 18.5	2.00 2.50		0.015	0.045	N < 0.11		1.4980 1.4944	ASTM A 453 Grade 660	Mo content provides 316LHP high mechanical properties and an excellent corrosion resistance in most critical environments. It is fully amagnetic and presents a very high level of cleanliness due to its vacuum remelting route. This makes it particularly suitable for very fine redrawing or medical applications as surgical implants.
Superimphy® 286	0.03 0.08	1.00	2.00	24.0 27.0	13.5 16.0	1.00 1.50		0.015	0.025	V 0.10 / 0.50 Ti 1.90 / 2.30 Al < 0.35 B 0.003 / 0.010	UNS S66286			Precipitation hardening grade with high mechanical properties and corrosion resistance at high temperature. Fasteners, bolts, springs for high-temperature parts of engines or exhaust systems in automotive or aerospace application. Available in remelted version when perfect cleanliness is required.

Contact us:

[www.aperam.com/alloys-imphy](http://www.aperam.com/alloys-imphy)

[nickel.alloys@aperam.com](mailto:nickel.alloys@aperam.com)

T: + 33 (0)3 86 21 34 37

F: +33 (0)3 86 21 31 14

**Aperam Alloys Imphy**

BP1

58160 Imphy

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