

Nodular Cast Iron

EN Designation	EN-No.	Old designation	Alloying elements (indicative)	Treatment	Mechanical properties					Special properties and information about the application
					Rp _{0,2} (N/mm ²)	Rm (N/mm ²)	A5 (%)	Av (ISO-V) (J)	Hardness (HB)	
EN-GJS-400-15	EN-JS1030	GGG 40		A/G	250	400	15		135 - 185	Ferritic
EN-GJS-400-18-LT	EN-JS1025	GGG 40.3		G	240	400	18	12 bei -20°C	120 - 165	Ferritic material with guaranteed notch bar impact value.
EN-GJS-XSiMo 4 05	- - -	GGG SiMo 4 05	Si 4 %, Mo 0.5 %	G/A	420	550	8		200 - 250	Ferritic nodular cast iron with a good oxidation and heat resistance. Field of application: turbocharger and gas turbines housings, exhaust manifolds for diesel engines.
EN-GJS-XSiMo 4 1	- - -	GGG SiMo 4 1	Si 4 %, Mo 1.0 %	G	480	550	5		200 - 250	

Austenitic Cast Iron (Ductil)

EN Designation	EN-No.	Old designation	Alloying elements (indicative)	Treatment	Mechanical properties					Special properties and information about the application
					Rp _{0,2} (N/mm ²)	Rm (N/mm ²)	A5 (%)	Av (ISO-V) (J)	Hardness (HB)	
EN-GJSA-XNiMn13-7	EN-JS3071	GGG-NiMn 13 7	Ni 13 %, Mn 7 %	A	210	390	15	16	120 - 150	Non-magnetizable components.
EN-GJSA-XNiCr20-2	EN-JS3011	GGG-NiCr 20 2	Ni 20 %, Cr 2 %	A	210	370	7	13	140 - 255	Pumps, valves, compressors, housings for turbochargers.
EN-GJSA-XNi22	EN-JS3041	GGG-Ni 22	Ni 22 %	A	170	370	20	20	130 - 170	High rupture elongation, less corrosion and heat resistant than EN-GJSA-XNiCr20-2. Sub-zero temperature toughness down to -100°C. Non-magnetizable.
EN-GJSA-XNi35	EN-JS3051	GGG-Ni 35	Ni 35 %	A	210	370	20	-	130 - 180	Low thermal expansion, guarantees dimensional stability.
EN-GJSA-XNiSiCr35-5-2	EN-JS3061	GGG-NiSiCr 35 5 2	Ni 35 %, Si 5 %, Cr 2 %	A	200	370	10	-	130 - 170	Good resistance to thermal shock. Highest service temperature approx. 850°C. Housing parts for gas turbines and turbochargers, exhaust pipes.

Treatment: A = as-cast condition G = annealed L = solution annealed and quenched N = normalized QT = quenched and tempered

Wear Resisting High-Chromium Cast Alloys

Old designation	EN-No.	EN Designation	Alloying elements (indicative)	Hardness soft-annealed, HRC	Hardness quenched and tempered, HRC	Special properties and information about the application
G-X150Cr25	---	---	C 1.5%, Cr 25 %	30 - 38	55 - 60	Very high wear resistance, suitable if high impact stress is required. With rising carbon content the wear resistance increases, while the impact stress diminishes. After soft annealing most alloys can be machined and afterwards hardened to the required hardness. Field of application: parts exposed to abrasive wear like extruder casings, slurry pumps, wear linings, etc. The alloys with Cr > 25% are highly corrosion resistant.
G-X200CrMo25-3	EN-JN3 049	EN-GJN-HV600(XCr23)	C 1.8%, Cr 25 %	30 - 38	55 - 60	
G-X260Cr27	EN-JN3 049	EN-GJN-HV600(XCr23)	C 2.5 %, Cr 27 %	34 - 38	58 - 62	
G-X300CrMo15-3 LC	EN-JN3 029	EN-GJN-HV600(XCr14)	C 2.2%, Cr 15 %	30 - 34	60 - 65	
G-X300CrMo15-3 HC	EN-JN3 029	EN-GJN-HV600(XCr14)	C 3.5%, Cr 15 %	(34 - 38)	60 - 65	
G-X320CrMoWV15-2	EN-JN3 029	EN-GJN-HV600(XCr14)	C 3.2%, Cr 15 %	---	61 - 64	
G-X320CrV27	---	---	C 3.2 %, Cr 27 %	---	58 - 62	

Low Alloy Cast Steel

EN Designation	EN-No.	Chemical composition per cent by weight (indicative)							Treatment	Mechanical properties					Special properties and information about the application
		C	Si	Mn	Cr	Ni	Mo	V		Rp _{0.2} (N/mm ²)	Rm (N/mm ²)	A5 (%)	Av (ISO-V) (J)	Hardness (HB)	
GE300 (GS-60)	1.0558	0.40	0.50	0.40					N/QT	300	520 - 670	18	31	150 - 200	Steel casting for general applications at temperatures between -10 and +300°C.
G20Mn5	1.6220	0.20	0.50	1.10					N/QT	300	500 - 650	22	60	150 - 200	Steel casting with good weldability and ductility.
G15CrNi6	1.5921	0.16	0.35	0.45	1.50	1.50			QT	540	780 - 1060	11	41		Good mechanical properties of the core after case hardening. Surface hardness 58 - 62 HRC, 1.5 - 3.0 mm

Heat Treatable Cast Steel

EN Designation	EN-No.	Chemical composition per cent by weight (indicative)							Treatment	Mechanical properties					Special properties and information about the application
		C	Si	Mn	Cr	Ni	Mo	V		Rp _{0.2} (N/mm ²)	Rm (N/mm ²)	A5 (%)	Av (ISO-V) (J)	Hardness (HB)	
G26CrMo4	1.7221	0.26	0.40	0.70	1.00		0.25		QT I	450	600 - 750	16	40	185 - 220	Parts with intermediate operational demands for the machine building and vehicle manufacturing industrie.
G42CrMo4	1.7231	0.40	0.40	0.80	1.00		0.25		QT I	600	800 - 950	12	31	230 - 275	
G30CrMoV6-4	1.7725	0.30	0.40	0.80	1.40		0.40	0.10	QT I	700	850 - 1000	14	45	250 - 300	Heat treatable steel casting with high ductility for heavy-duty machine parts.
G35CrMoV10-4	1.7755	0.35	0.55	0.70	2.50		0.40	0.10	QT I	700	850 - 1000	15	45	250 - 300	

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Stainless Cast Steel

EN Designation	EN-No.	Chemical composition per cent by weight (indicative)							Treatment	Mechanical properties					Special properties and information about the application
		C	Si	Mn	Cr	Ni	Mo	others		R _{p0.2} (N/mm ²)	R _m (N/mm ²)	A ₅ (%)	Av (ISO-V) (J)	Hardness (HB)	
Martensitic Types															
GX4CrNi13-4	1.4317	0.06	0.4	0.7	13.0	4.0	0.4		QT I	550	760	15	50	240 - 300	Chromium-nickel martensitic steel with high cavitation resistance and good weldability.
									QT II	830	900	12	35	280 - 350	
GX4CrNiMo16-5-1	1.4405	0.06	0.4	0.7	15.5	5.5	0.9		QT I	540	760	15	60	225 - 285	Martensitic chromium steel for apparatus construction.
GX22CrNi17	1.4059	0.23	0.6	0.4	18.0	1.5			QT	590	780 - 980	4	-	230 - 300	
Austenitic Types															
GX5CrNiMo19-11-2	1.4408	0.07	0.9	0.7	19.0	10.0	2.2		L	185	440	30	60	130 - 200	High corrosion resistance and good weldability. Pumps, fittings and machine parts for the chemical industry.
GX5CrNiMoNb16-13-2	---	0.06	0.5	0.7	16.0	13.0	2.3	N=0.20	A	240	460	30	-	130 - 200	Fully austenitic nitrogen alloyed steel, also suitable for high temperature application
Ferritic-Austenitic Types (DUPLEX)															
GX4CrNiMoN27-5-2	1.4460	0.05	0.5	1.0	26.5	5.5	1.6	N = 0.18	L	450	620 - 880	20	85	260	Parts with increased resistance against pitting and crevice corrosion in chloride containing media.
GX2CrNiMoN25-6-3	1.4468	0.03	0.6	0.7	25.5	6.0	3.0	N = 0.20	L	480	650	22	50	230 - 270	
GX2CrNiMoCuN25-6-3-3	1.4517	0.03	0.6	0.7	26.0	6.5	3.0	N = 0.18 Cu = 3.0	L	480	650	22	50	230 - 270	Better corrosion resistance than 1.4468. Appropriate for flue gas desulphurisation plants.

Heat Resistant Cast Steel

EN Designation	EN-No.	Chemical composition per cent by weight (indicative)							Treatment	Mechanical properties					Special properties and information about the application
		C	Si	Mn	Cr	Ni	Mo	V		R _{p0.2} (N/mm ²)	R _m (N/mm ²)	A ₅ (%)	Av (ISO-V) (J)	Hardness (HB)	
G17CrMoV5-10	1.7706	0.18	0.5	0.5	1.3		1	0.25	V	440	590 - 780	15	27	175 - 230	For steel castings exposed to temperatures between 300 and 600°C. Next to the high temperature tensile strength, the main characteristic is the good creep resistance.
GX23CrMoV12-1	1.4931	0.22	0.3	0.6	12	0.9	1.2	0.3	V	540	740 - 880	15	27	220 - 260	

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Heat and Creep Resistant Cast Steel

EN Designation	EN-No.	Chemical composition per cent by weight (indicative)							Treatment	Mechanical properties					Special properties and information about the application
		C	Si	Mn	Cr	Ni	Mo	others		Rp _{0.2} (N/mm ²)	Rm (N/mm ²)	A5 (%)	Av (ISO-V) (J)	Hardness (HB)	
GX25CrNiSi18-9	1.4825	0.21	1.7	0.8	18	9	< 0.5		A	230	450	15	-	130 - 180	Highest service temperature 900°C.
GX40CrNiSi22-10	1.4826	0.40	2.0	1.2	22	10	< 0.5		A	230	450	8	-	130 - 180	Heavy duty parts. Highest service temperature 950°C.
GX32CrNiWN24-12	---	0.32	1.1	0.2	23	12	< 0.5	N = 0.25	A	220	450	6	-	130 - 180	Heavy duty parts. Highest service temperature 1050°C.

Heat and Creep Resistant Cast Alloys

EN Designation	EN-No.	Chemical composition per cent by weight (indicative)							Treatment	Mechanical properties					Special properties and information about the application
		C	Si	Mn	Cr	Ni	Mo	others		Rp _{0.2} (N/mm ²)	Rm (N/mm ²)	A5 (%)	Av (ISO-V) (J)	Hardness (HB)	
GX12CrCoNi21-20	1.4971	0.12	0.4	0.4	21	20	2.9	Co, W, Nb, N	A	230	440	8	-	160 - 200	Parts with high thermal shock resistancy.
G-NiCr18WNb Nicrocast 73	---	0.5	1.2	1.2	18.5	55		W = 1.5 Nb = 1.5	A		510	8			Special resistance against corrosion by gases at temperatures above 600°C
GNiCr22Mo9Nb Inconel 625	2.4856	0.05	0.35	0.35	21.5	Rest	8.5	Nb = 3.5	L	275	485	25	-	130 - 160	Very good heat and corrosion resistancy for parts for steam and gas turbines.

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