



# CHEMICAL FORMULA for COMMONLY USED CHINESE STEEL

## CARBON STEEL

CHINA(GB)	Specification#	No.	Chemical composition(%)							
			C	Si	Mn	P	S	Ni	Cr	Cu
CHINA(GB)	carbon steel	08F	0.05-0.11	≤0.03	0.25-0.50	≤0.035	≤0.035	≤0.25	≤0.10	≤0.25
CHINA(GB)	carbon steel	10F	0.07-0.14	≤0.07	0.25-0.50	≤0.035	≤0.035	≤0.25	≤0.15	≤0.25
CHINA(GB)	carbon steel	20	0.17-0.24	0.17-0.37	0.35-0.65	≤0.035	≤0.035	≤0.25	≤0.25	≤0.25
CHINA(GB)	carbon steel	45	0.42-0.50	0.17-0.37	0.50-0.80	≤0.035	≤0.035	≤0.25	≤0.25	≤0.25
CHINA(GB)	carbon steel	T10A	0.95-1.04	≤0.35	≤0.40	≤0.035	≤0.030			
CHINA(GB)	carbon steel	Q235	0.14-0.22	≤0.30	0.30-0.65	≤0.045	≤0.050			

## ALLOY STEEL

CHINA(GB)	Specification#	No.	Chemical composition(%)							
			C	Si	Mn	Cr	Ni	Mo	other	
CHINA(GB)	alloy steel	40Cr	0.37-0.44	0.17-0.37	0.50-0.80	0.80-1.10	≤0.30			
CHINA(GB)	alloy steel	15CrMn	0.12~0.18	0.17~0.37	1.10~1.40	0.40~0.70				
CHINA(GB)	alloy steel	42CrMo	0.38-0.45	0.17-0.37	0.50-0.80	0.90-1.20	≤0.30	0.15-0.25		
CHINA(GB)	alloy steel	38CrMoAl	0.35-0.42	0.20-0.45	0.30-0.60	1.35-1.65	≤0.30	0.15-0.25	Al0.70-1.10	
CHINA(GB)	alloy steel	20CrMnTi	0.17-0.23	0.17-0.37	0.80-1.10	1.00-1.30	≤0.30		Ti0.04-0.10	
CHINA(GB)	alloy steel	Q345	≤0.20	≤0.50	≤1.70					

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## SPRING STEEL

CHINA(GB)	Specification#	No.	Chemical composition(%)							
			C	Si	Mn	P	S	Ni	Cr	Cu
CHINA(GB)	Spring Steel	65Mn	0.62-0.70	0.17-0.37	0.90-1.00	≤0.035	≤0.035	≤0.25	≤0.25	≤0.25

## EASY CUTTING STEEL

CHINA(GB)	Specification#	No.	Chemical composition(%)							
			C	Si	Mn	P≤	S≤			
CHINA(GB)	Y15	0.10-0.18	≤0.15	0.80-1.20	0.05-0.10	0.23-0.33				
CHINA(GB)	1215	≤0.09		0.75 ~ 1.05	0.04 ~ 0.09	0.26 ~ 0.35				
CHINA(GB)	1215MS	≤0.09	≤0.15	1.10~1.40	0.04 ~ 0.09	0.33~0.42				
CHINA(GB)	12L14	≤0.15		0.85 ~ 1.15	0.04 ~ 0.09	0.26 ~ 0.35				

## GREY IRON

CHINA(GB)	Specification#	No.	Chemical composition(%)							
			C	Si	Mn	P≤	S≤	Ni	Mo	other
CHINA(GB)	HT200	3.0~3.6	≤0.12	0.6~1.0	<0.15	1.4~2.0				
CHINA(GB)	HT250	3.16~3.30	1.79~1.93	0.89~1.04	0.120~0.170	0.094~0.125				

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### DUCTILE IRON

CHINA(GB)	Specification#	No.	Chemical composition(%)							
		C	Si	Mn	P≤	S≤	Mg	Re	other	
CHINA(GB)	QT400-18	3.45~3.64	2.47~3.00	0.45~0.57	0.047~0.060	0.012~0.026	0.029~0.062	0.032~0.047		
CHINA(GB)	QT400-15	3.6~4.0	1.2~1.9	<0.6	<0.07	<0.08				
CHINA(GB)	QT500-7	3.55~3.85	2.34~2.86	<0.6	<0.08	<0.025	0.02~0.04	0.03~0.05		

### STAINLESS STEEL

CHINA(GB)	Specification#	No.	Chemical composition(%)							
		C	Si	Mn	P	S	Ni	Cr	Mo	
CHINA(GB)	Stainless Steel	1Cr17	0.12	≤0.75	≤1.00	≤0.035	≤0.030	≤0.60	16.00-18.00	
CHINA(GB)	Stainless Steel	2Cr13	0.16-0.25	≤1.00	≤1.00	≤0.035	≤0.030	≤0.60	12.00-14.00	
CHINA(GB)	Stainless Steel	303S.S.	≤0.15	≤1.00	≤2.00	≤0.20	≤0.15	8.00-10.00	17.00-19.00	≤0.6
CHINA(GB)	Stainless Steel	304S.S.	≤0.08	≤1.00	≤2.00	≤0.035	≤0.030	8.00-11.00	17.00-19.00	
CHINA(GB)	Stainless Steel	316S.S.	≤0.08	≤1.00	≤2.00	≤0.045	≤0.030	10.00-14.00	16.00-18.00	2-3

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