The difference between 202, 304 & 316 Grade Stainless Steel

The following table presents the main elements (forming the chemical compositions) of 316 Marine Grade Stainless Steel compared to other cheaper grade steel such 304 or 202.

Element %	202 Grade	304 Grade	316 Grade	Implications
Carbon	0.15	0.08	0.08	Increase in % decreases the corrosion resistance
Silicon	1.00	1.00	1.00	–
Manganese	7.5 to 10.0	2.00	2.00	Affects the magnetic characteristic and hardness of Iron
Phosphorous	0.06	0.045	0.045	–
Sulphur	0.03	0.03	0.03	–
Chromium	17.0 to 19.0	18.0 to 20.0	16.0 to 18.0	Addition of 12% forms stainless steel from ordinary steel. Removes the corrosive effect of Carbon. Forms a passive film which prevents oxidation & consequent corrosion.
Molybdenum (MOLY)	NIL	NIL	2 to 3	Molybdenum increases the corrosion resistance. It has a superior tensile strength at high temperature as compared to 304 Grade Steel. This element can resist major chemical reaction and thus is a very costly element
Nickel	4 to 6	8.0 to 10.5	10.0 to 14.0	Nickel provides corrosion resistance, increases strength at both high & low temperature, increases toughness at low temperature and lowers the effects of work hardening. A higher percentage nickel content makes the steel a superior quality

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