Maraging Steel 1

Description: **Maraging Steel 1 is a pre-alloyed ultra-high-strength steel in fine powder form. Its composition corresponds to U.S. classification 18% Ni Maraging 300, European 1.2709 and German X3NiCoMoTi 18-9-5. This kind of steel is characterized by having very good mechanical properties and being easily heat treatable using a simple thermal age-hardening process to obtain excellent hardness and strength.**

Applications:

- Heavy-duty injection molds and inserts for molding all standard thermoplastics using standard injection parameters, with achievable tool life of up to millions of parts
- Die-casting molds for up to several thousand parts in light alloys
- Direct manufacture of part for engineering applications including functional prototypes, small series products, individualized products, or spare parts
- Parts requiring particularly high strength and hardness

Nickel (Ni) = max 18.00%	Aluminum (Al) = max 0.096%	Silicon (Si) = max 0.014%
Cobalt (Co) = max 8.90%	Chromium (Cr) = max 0.11%	Phosphorous (P) = max 0.008%
Molybdenum (Mo) = max 4.92%	Carbon (C) = max 0.011%	Sulfur (S) = max 0.003%
Titanium (Ti) = max 0.64%	Manganese (Mn) = max 0.062%	Iron (Fe) = Balance
Copper (CU) = max 0.023%	Oxygen (O) = max 0.059%	
Nitrogen (N) = max 0.027%	Hydrogen (H) = 0.0003%	

Heat Treatment (HT): (OPTION 1) 915°F for 6 hours (strength and hardness)
(OPTION 2) 1100°F for 6 hours (ductility)

		3DMT MATERIAL DATA		
	Typical Wrought	**MLS (as built)**	**MLS (HT OPTION 1)**	**MLS (HT OPTION 2)**
0.02% Yield (ksi)	290	**147.7**	**280.6**	**172.5**
Ultimate Tensile (ksi)	294	**167.2**	**289.6**	**199.5**
Elongation (%)	11	**8.5**	**3.8**	**9.9**
Hardness (HRC)	52	**34.5**	**52.1**	**41.4**

The date above is general information that may vary from machine to machine and supplier to supplier.