

**Chemical composition – cast analysis, % by mass**

Grade	Delivery condition	Correspondent steel grade	C	Mn	Si	P	S	N	V	Ceq
			max.	max.	max.	max.	max.	max.	max.	
ART H355	+N	E355 +N (acc. EN 10305-1)	0.22	1.6	0.55	0.025	0.02	0.009		≤0.49
ART H450	+SR	E355 +SR (acc. EN 10305-1)	0.22	1.6	0.55	0.025	0.02	0.009		≤0.49
ART H460	+N	P460NL +N (acc. EN 10216-3)	0.2	1.00-1.70	0.6	0.025	0.005	0.0075	0.2	≤0.56
ART H525	+SR	E355 +SR (acc. EN 10305-1)	0.22	1.6	0.55	0.025	0.02	0.009		≤0.49
ART H560	+SR	E355 +SR (acc. EN 10305-1)	0.22	1.6	0.55	0.025	0.02	0.009		≤0.49
ART H620	+SR	E410 +SR (acc. EN 10305-1)	0.16-0.22	1.30-1.70	0.10-0.50	0.03	0.02	0.0075	0.08 - 0.15	≤0.56
ART H690	+SR	E410 +SR (acc. EN 10305-1)	0.16-0.22	1.30-1.70	0.10-0.50	0.03	0.02	0.0075	0.08 - 0.15	≤0.60

**Note**

1. For grade showing sulfur content up to 0.020%, the sulfur can be added at manufacturer discretion to support machinability. The sulfur will be controlled added after a deep desulfurization.
2. Ceq is calculated by formula :  $Ceq = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15$
3. For grades ART H460, ART H620, ART H690 at manufacturer's discretion the elements Nb, Ti and V can be added in order to obtain fine grain structure. The sum of these elements will be maximum 0.20%.
4. Steel grade ART H460 is fully comply also with EN 10216-3- P460NH.
5. Other chemical elements such Cr, Mo, Ni, Al, Cu not included here will be reported in MTR.