

Casting alloys

MAXXALLOY[®] - ULTRA[®]

GBD- AlMg5Si2MnCr - RE

Properties and application

MAXXALLOY[®]-Ultra[®] is a low-iron alloy for high-strength and yet ductile die cast parts. The special alloy composition offers maximum strength and ductile yield properties already after casting, making heat treatment unnecessary. The mechanical properties that can be achieved with MAXXALLOY[®]-Ultra[®] are comparable to forged articles of EN AW-6082 in condition T6.

Elimination of the heat treatment reduces the manufacturing costs of the die cast parts by:

- Saving on heat treatment costs (energy, investments)
- No heat treatment scrap (distorted parts, blisters)
- No reworking (e.g. straightening work on the parts)

Composition in the block in % by mass:

Si	Fe	Cu	Mn	Mg	Zn	Ti	Other
2.2 – 3.0	0.2	0.02	0.6 – 0.8	5.6 – 6.2	0.07	0.05-0.15	Cr, Be, SE

The mechanical properties of MAXXALLOY[®]-Ultra[®] depend on the wall thickness of the cast part. Strength and ductile yield decline with increasing wall thickness, making the alloy best suited for the manufacture of highly stressed cast parts.

The following table offers an overview:

Wall thickness mm	0.2% Yield strength $R_{p0.2}$ [N/mm ²]	Tensile strength R_m [N/mm ²]	Ductile yield A 5 [%]	Brinell hardness HB 5/250
2 – 4	220	350	10 -12	90 – 105
4 – 6	200	330	8 - 10	85 -95

What advantages does SAG Aluminium Lend offer you:

- We are an innovative alloy manufacturer
- We offer you high flexibility through compact batch sizes (12 t)
- Customer-supplier relationship based on partnership
- We work together with external partners (research institutes, universities)
- We view material development as our core competence
- Our advice is based on know-how from our own manufacturing and R&D work

Alloy MAXALLOY®-ULTRA© is delivered exclusively in the form of pigs produced through horizontal continuous casting (HCC). In this way, we offer the following advantages:

- Less scrap through maximum metal purity and uniformity
- Clean pigs without oxide inclusions
- No hard non-metallic inclusions
- Low gas content in the pigs thanks to inline degassing during production
- Lower costs through
 - Reduced metal loss during melting
 - Good and safe stackability
 - Low space requirements thanks to compact pig bunches

Contact: