

Aluminium alloy EN AB-46400

Chemical designation:

EN AB-AlSi9Cu1Mg

Swedish standard:

Type -, [1], [2]

Chemical composition¹:

| | Min % | Max % |
|----|-------|-------|
| Si | 8,3 | 9,7 |
| Fe | - | 0,7 |
| Cu | 0,8 | 1,3 |
| Mn | 0,15 | 0,55 |
| Mg | 0,30 | 0,65 |
| Cr | - | - |
| Ni | - | 0,20 |
| Zn | - | 0,8 |
| Pb | - | 0,094 |
| Sn | - | 0,10 |
| Ti | - | 0,18 |

Others each max 0,05%
and total max 0,25%

General description of properties:

Universal alloy with very good castability. Little tendency towards forming surface defects and internal cavities due to shrinkage on solidification. Good machinability and weldability.

Suitable applications:

For wide range of applications. Also for complicated and thin-wall castings.

Heat treatment:

Solution heat treated at 520-530°C for 3-6 hours followed by quenching in water and artificial ageing at 150-175°C for 15-5 hours.

Casting characteristics, S-Sand cast, K-Chill cast²:

| Solidification range, °C, about | Casting temperature °C, about | Fluidity | Resistance to hot tearing | Shrinkage %, about | Pressure tightness |
|---------------------------------|-------------------------------|----------|---------------------------|----------------------|--------------------|
| 600-550 | 680-750 | Good | Good | S: 1-1,1 K: 0,8-1 | Good |

Mechanical properties of separately untreated cast test bars²:

| Tensile strength, R _m , MPa, min. | Proof stress R _{p0,2} , MPa, min. | Elongation A ₅₀ , %, min. | Brinell hardness HBS, min. |
|--|--|--------------------------------------|----------------------------|
| S: 135 K: 170 | S: 90 K: 100 | S: 1 K: 1 | S: 60 K: 75 |

Mechanical and physical properties²:

| Density kg/dm ³ | Strength | Machinability | Weldability | Resistance to corrosion |
|----------------------------|------------------------|--|------------------------------|----------------------------|
| 2,65 | Excellent | Good | Good | Poor |
| Decorative anodizing | Ability to be polished | Linear thermal expansion 293-373°K, °K ⁻¹ | Electrical conductivity MS/m | Thermal conductivity W/m°K |
| Not recom. | Poor | 21 x 10 ⁻⁶ | 16 – 22 | 130 - 150 |