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# TECHNICAL DATA-SHEET

**ALLOY DESCRIPTION**: EN AB 45500 - Al Si 7 Cu 0.5 Mg

**ALLOY GROUP**: Al Si 5 Cu

**STANDARD**: UNI EN 1676 e 1706

## CHEMICAL COMPOSITION %

| Elements | Si | Fe | Cu | Mn | Mg | Cr | Ni | Zn | Pb | Sn | Ti | Others each | Others tot. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | 6,5 | | 0,2 | | 0,25 | | | | | | | | |
| Max | 7,5 | 0,25 | 0,7 | 0,15 | 0,45 | 0,03 | 0,03 | 0,07 | 0,03 | 0,03 | 0,20 | 0,03 | 0,10 |

## MECHANICAL PROPERTIES

| CASTING PROCESS | TEMPER DESIGNATIONS | TENSILE STRENGHT | YIELD STRENGHT | ELONGATION | BRINELL HARDNESS |
|---|---|---|---|---|---|
| | | (Mpa) | (Mpa) | (%) | (HBW) |
| **SAND** (As cast) | T6 | 250 | 190 | 1 | 85 |
| Annealed | | | | | |
| **SHELL** (As Cast) | T6 | 320 | 240 | 4 | 100 |
| Annealed | | | | | |
| **DIECASTING** (As Cast) | | | | | |

## PHYSICAL PROPERTIES

| | | | |
|---|---|---|---|
| **DENSITY** | 2,66 Kg/dm3 | **OPTIMUM RANGE OF SAND CASTING** | 680-750 °C |
| **MELTING RANGE** | 550-625 °C | **OPTIMUM RANGE OF SHELL CASTING** | 681-750 °C |
| **ELECTRIC CONDUCTIVITY** | 16-22 MS/m | **OPTIMUM RANGE OF DIECASTING** | |
| **THERMAL CONDUCTIVITY** | 150-165 W/(m K) | **FATIGUE RESISTANCE** | 80-110 MPA |

## TECHNOLOGICAL PROPERTIES

| | | | |
|---|---|---|---|
| **CASTABILITY** | GOOD | **RESISTANCE TO HOT TEARING** | GOOD |
| **WELDABILITY** | GOOD | **STRENGHT AT ELEVATED TEMPERATURE** | GOOD |
| **POLISHING** | MEDIUM | **PRESSURE TIGHTNESS** | GOOD |
| **MACHINABILITY** | GOOD | **DECORATIVE ANODIZING** | NOT RECOMMENDED |
| **CORROSION RESISTANCE** | GOOD | **PROTECTIVE ANODIZING** | NOT RECOMMENDED |

## APPLICATIONS

Alloy used in the manufacture of components for the automotive, railway, etc.
Alloy compliant with the Food standard EN 601, if the value of Copper is not more than 0.6%..

## HEAT TREATMENTS

| | | SOLUBILIZATION TEMPERATURE | SOLUBILIZATION DURATION | WATER HARDENING TEMPERATURE | AGING TEMPERATURE | AGING DURATION |
|---|---|---|---|---|---|---|
| **F** | **RAW STATE** | - | - | - | - | - |
| **O** | **ANNEALING** | 520-530 °C | 6-8 hours | 20 °C | - | - |
| **T1** | **SELF-HARDENING** | - | - | - | - | - |
| **T4** | **NATURAL AGING** | 480-530 °C | 2-16 hours | 20-80 °C | 15-30 °C | 120 hours |
| **T5** | **ARTIFICIAL HARDENING AND AGING** | - | - | AIR | 210-230 °C | 5-12 hours |
| **T6** | **ARTIFICIAL AGING** | 480-555 °C | 2-20 hours | 20-80 °C | 130-185 °C | 2-15 hours |
| **T64** | **PARTIAL AGING** | 520-545 °C | 4-10 hours | 20-50 °C | 135-160 °C | 2-7 hours |
| **T7** | **HYPERAGING** | 480-530 °C | 1-8 hours | 20 °C | 190-240 °C | 1-8 hours |

The temperatures and the duration of the treatments vary according to the type of alloy, melting (shell, sand or die casting) and the result you want to obtain.
Ideal parameters shall be determined by a test.

## EQUIVALENTS OR SIMILARS FOREIGN REGULATIONS

| | ITALY | GERMANY | FRANCE | G.B.R. | USA | ISO | JAPAN | TURKEY |
|---|---|---|---|---|---|---|---|---|
| | UNI | Din1725/5-86 | NFA57-105 | BS1490-88 | ASTM 179-82 | 3522-84 | JIS H2211-92 | ETIAL |
| **Equivalents** | | | | | | | | |
| **Similars** | | | | | | | | |

What is indicated in this data sheet is limited to inform only and does not imply any guarantee regarding the properties reported.
Everything that involves decisions based on the information stated here is direct responsibility of the end user, as well as any risks, not excluded from the verification.
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