

STEP/G

2011E

## DATA SHEET

### GENERAL PROPERTIES

- Lead free, i.e. Pb ≤ 0.4%
- Excellent machinability (grade A) equivalent to AA2011/AlCu6BiPb with very fine chips.
- Excellent surface finish after machining, grinding and/or polishing.
- High mechanical properties equivalent to AA2011/AlCu6BiPb.
- Limited corrosion resistance comparable to AA2011/AlCu6BiPb. Corrosion protection possible through surface treatment.
- Poor weldability (gas, arc, resistance) and brazability.
- Cannot be used for applications in contact with foodstuff according to EN 602:2004.

### APPLICATION

- Machining of complex and detailed aluminium parts on multi spindle lathes (i.e. fittings, gears, bearings, nozzles, valves, connectors, machine parts, trim, ...) requiring excellent machinability, good strength and high productivity.
- 2011E is an environmentally-friendly alternative to machining alloys AA2011/AA2011A/AlCu6BiPb.
- Lead free according to the EC Directive 2000/53/EC on end-of-life vehicles (ELV) and the EC Directive 2002/95/EC on waste electrical equipment (RoHS).

### CHEMICAL COMPOSITION

| %   | Si  | Fe  | Cu   | Zn   | Bi   | Pb   | each | total |
|-----|-----|-----|------|------|------|------|------|-------|
| min | -   | -   | 5.0  | -    | 0.20 | 0.20 | -    | -     |
| max | 0.4 | 0.7 | 6.00 | 0.30 | 0.60 | 0.40 | 0.05 | 0.15  |

### SANKYO TATEYAMA EUROPE PRODUCTION POSSIBILITIES

- ROUND, SQUARE AND FLAT BARS  
CIRCUMSCRIBED CIRCLE  
EXTRUDED: 9 – 220 mm  
DRAWN: 9 – 120 mm
- SOLID SECTIONS
- ALL TEMPERS AND STANDARDS
- INDIRECT/DIRECT EXTRUSION
- HEAT TREATMENT
- DRAWING, STRAIGHTENING & CHAMFERING
- STRESS RELIEVING
- ANNEALING & AGEING
- ULTRASONIC & EDDY CURRENT INSPECTION

### PHYSICAL PROPERTIES

- Elastic modulus: 70GPa
- Melting point: 540°C
- Specific weight: 2.83 kg/dm<sup>3</sup>
- Thermal conductivity (25°C): 170 – 220 W/mK
- Thermal expansion (20 – 100°C): ± 23 µm/mK
- Electrical conductivity (20°C): 24 – 32 MS/m

### MECHANICAL PROPERTIES

| Temper | Dimension [mm] | R <sub>m</sub> [MPa] | R <sub>p0.2</sub> [MPa] | A5 [%] |
|--------|----------------|----------------------|-------------------------|--------|
| T9     | ≤ 40           | ≥ 320                | ≥ 270                   | ≥ 10   |
|        | ≤ 40 - 50      | ≥ 300                | ≥ 250                   | ≥ 10   |
|        | > 50 - 80      | ≥ 280                | ≥ 210                   | ≥ 10   |
| T8     | ≤ 80           | ≥ 370                | ≥ 270                   | ≥ 8    |
| T6     | ≤ 75           | ≥ 310                | ≥ 230                   | ≥ 8    |

Minimum values can be optimized according to product requirements.

T3 – solution heat treated, cold worked and naturally aged

T8 – solution heat treated, cold worked and artificially aged

T6 – solution heat treated and artificially aged