New Material:

**FORMODAL® 024 elox**

cast plates with improved anodizing ability

Applications:
- tool making, mold making and model making
- laser technology
- cover plates
- printing technology
- fixture construction
- electronics and optical industry
- packaging technology
- medical technology
FORMODAL® 024 elox

CHEMICAL COMPOSITION

Aluminum and aluminum alloys
Special alloy with improved anodizing ability cast plates - precision milled or rough sawn

Alloy designation:
- EN AW 5083
- EN AW Al Mg 4.5 Mn 0.7
- Old designation Al Mg 4.5 Mn
- Material no. according to DIN 3.3547
- Great Britain BSI 89
- Italy UNI 7790
- Spain L-3321
- Sweden 144140
- Norway 17215
- France AFNOR A-04.0MC
- Color code RAL 8002 Signal Brown

Typical physical properties:
- Density [lb./in³]: 0.0961
- Elastic modulus: 10153 ksi
- Thermal conductivity: 62.6 - 90.9 Btu/ft x h x °F
- Coeff. of Thermal Exp.:
  -58°F – 68°F: 12.78
  68°F – 212°F: 12.78
  68°F – 392°F: 12.78
  68°F – 572°F: 12.78
- Specific heat: 167 ft lbf / lb °F
- Electrical conductivity: 30 IACS

Chemical composition* (EN 573-3):

<table>
<thead>
<tr>
<th>Elements</th>
<th>Si</th>
<th>Fe</th>
<th>Cu</th>
<th>Mn</th>
<th>Mg</th>
<th>Zn</th>
<th>Ti</th>
<th>Ga</th>
<th>V</th>
<th>Note</th>
<th>Individual</th>
<th>Total²</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>0.40</td>
<td>0.40</td>
<td>0.10</td>
<td>0.10 - 1.0</td>
<td>4.0 - 4.9</td>
<td>0.05 - 0.25</td>
<td>0.25</td>
<td>0.15</td>
<td>-</td>
<td>-</td>
<td>0.05</td>
<td>0.15</td>
</tr>
</tbody>
</table>

* Chemical specifications as perc. of weight; if no ranges are specified, the alloy content has the maximum value.

² Includes all items listed for which no limit values are specified.

Special features of this material:
- Very good machinability
- Excellent corrosion resistance
- Good welding properties
- Low stress and dimensionally stable
- Improved anodizing ability through optimised casting process and special homogenization
- Very good polishing
- Very fine-grained structure

Applications:
- Tool making, mold making and model making
- Laser technology
- Cover plates
- Printing technology
- Fixture construction
- Electronics and optical industry
- Packaging technology
- Medical technology

Available forms:
- Sheets
- Plates
- Cuttings
- Circular blanks
- Rings
- Parts from drawings

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WORLD OF METALS

Homogenization:
Special homogenization technique according to BIKAR specification.

Other data:
- Processing / machinability
  - Homogenized and stress relieved 1 – 2
  - Dimensional stability 1
  - Erosion 1
- Surface treatment
  - Anodizing - (protective anodization) 1
  - Anodizing - decorative 2 *
- Other data:
  - Polishing / coating 4
  - Welding 3
  - Solder 3
  - Corrosion resistance
    - In a normal atmosphere/weather conditions 1
    - Sea water atmosphere 1

Metal forming
- Cold forming 3
- Delivery condition 3
- Bending 5
- Pressure forming 5
- Deep drawing (condition-based) 5
- Upsetting (condition-based) 5
- Extrusion molding 5
- Hammer forging 5
- Impact extrusion 5

Suitable for food industry according to DIN EN 602: yes

Legend:
1 very good
2 good
3 moderate
4 poor
5 unsuited

Corrosion resistance
- In a normal atmosphere/weather conditions
- Sea water atmosphere

The specifications in our data sheets are subject to correction and are only valid as references. Liability is excluded in this regard. We reserve the right to make changes to the standards and informative values. The agreements of our order confirmation are always authoritative. With regard to anodic oxidisability, we point out that we accept no liability for the anodization result and the color formation for decorative applications. The same applies to the corrosion resistance. Special arrangements must be made in writing.

Version 110916 - This data sheet replaces all previous versions.
**Anodizing ability of alloy:**

With **FORMODAL® 024 elox**, the physical limits of the anodizing ability are exploited with an optimised casting process and special homogenization. This produces optimum anodizing results for this alloy.

However, for physical reasons (magnesium content), deviations in the anodized finish can occur, for which BIKAR is unable to accept any liability.

**Available forms:**

- Sheets
- Plates
- Cuttings
- Circular blanks
- Rings
- Parts from drawings