

## CLAL-MSX SICLANIC S® TD4 Quenched Copper Alloy, 4/4 Hard

Category : Metal , Nonferrous Metal , Copper Alloy

### Material Notes:

SICLANIC S® is particularly recommended for the production of conductive contact blades. SICLANIC S® offers :electrical conductivity greatly superior to that of bronzes, brasses and nickel silvermechanicals properties on a par with those of copper cobalt- beryllium and of bronzeexcellent fatigue strengthvery competitive cost compared with copper-cobalt-beryllium.Information provided by CLAL-MSX

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_CLAL-MSX-SICLANIC-S-TD4-Quenched-Copper-Alloy-44-Hard.php](http://www.lookpolymers.com/polymer_CLAL-MSX-SICLANIC-S-TD4-Quenched-Copper-Alloy-44-Hard.php)

| Physical Properties | Metric    | English                  | Comments |
|---------------------|-----------|--------------------------|----------|
| Density             | 8.90 g/cc | 0.322 lb/in <sup>3</sup> |          |

| Mechanical Properties      | Metric               | English              | Comments |
|----------------------------|----------------------|----------------------|----------|
| Hardness, Vickers          | 195 - 250            | 195 - 250            |          |
|                            | 200                  | 200                  |          |
|                            | @Time 18000 sec      | @Time 5.00 hour      |          |
|                            | 203                  | 203                  |          |
|                            | @Time 14400 sec      | @Time 4.00 hour      |          |
|                            | 210                  | 210                  |          |
|                            | @Time 10800 sec      | @Time 3.00 hour      |          |
|                            | 220                  | 220                  |          |
|                            | @Time 7200 sec       | @Time 2.00 hour      |          |
|                            | 225                  | 225                  |          |
|                            | @Time 3600 sec       | @Time 1.00 hour      |          |
| Tensile Strength, Ultimate | 400 - 470 MPa        | 58000 - 68200 psi    |          |
| Tensile Strength, Yield    | 390 - 450 MPa        | 56600 - 65300 psi    |          |
|                            | @Strain 0.200 %      | @Strain 0.200 %      |          |
| Elongation at Break        | 3.0 - 9.0 %          | 3.0 - 9.0 %          |          |
| Fatigue Strength           | 245 MPa              | 35500 psi            |          |
|                            | @# of Cycles 1.00e+7 | @# of Cycles 1.00e+7 |          |

| Thermal Properties | Metric       | English        | Comments |
|--------------------|--------------|----------------|----------|
|                    | 19.0 µm/m-°C | 10.6 µin/in-°F |          |

| CTE linear<br>Thermal Properties | Metric<br>@ Temperature 20.0 -<br>300 °C | English<br>@ Temperature 68.0 -<br>572 °F | Comments                           |
|----------------------------------|------------------------------------------|-------------------------------------------|------------------------------------|
| Specific Heat Capacity           | 0.370 J/g-°C                             | 0.0884 BTU/lb-°F                          |                                    |
| Thermal Conductivity             | 84.0 W/m-K                               | 583 BTU-in/hr-ft²-°F                      | solid solution (or quenched) state |
|                                  | 188.4 W/m-K                              | 1307 BTU-in/hr-ft²-°F                     | quenched state                     |
| Melting Point                    | 1040 - 1060 °C                           | 1900 - 1940 °F                            |                                    |
| Solidus                          | 1040 °C                                  | 1900 °F                                   |                                    |
| Liquidus                         | 1060 °C                                  | 1940 °F                                   |                                    |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|--------|---------|----------|
| Copper, Cu                    | 96.9 % | 96.9 %  |          |
| Nickel, Ni                    | 2.5 %  | 2.5 %   |          |
| Silicon, Si                   | 0.60 % | 0.60 %  |          |

| Electrical Properties  | Metric               | English              | Comments                      |
|------------------------|----------------------|----------------------|-------------------------------|
| Electrical Resistivity | <= 0.00000400 ohm-cm | <= 0.00000400 ohm-cm | precipitation hardened        |
|                        | 0.00000405 ohm-cm    | 0.00000405 ohm-cm    | precipitation hardened (1 hr) |
|                        | 0.00000410 ohm-cm    | 0.00000410 ohm-cm    | precipitation hardened (2 hr) |
|                        | 0.00000420 ohm-cm    | 0.00000420 ohm-cm    | precipitation hardened (3 hr) |
|                        | 0.00000420 ohm-cm    | 0.00000420 ohm-cm    | precipitation hardened (4 hr) |
|                        | 0.00000430 ohm-cm    | 0.00000430 ohm-cm    | precipitation hardened (5 hr) |
|                        | 0.00000780 ohm-cm    | 0.00000780 ohm-cm    | quenched                      |

## Contact Songhan Plastic Technology Co.,Ltd.

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