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Material Datasheet:
(B23)

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MACHINING / STAMPING BRASS RODS

B23 (low lead alloy with Bismuth)

Alloy for
machining and
hot stamping

ASBW B22 is a very low lead alloy with excellent characteristics for machining operations, thanks to a homogeneous distribution of bismuth which is not known to be toxic to humans. Also is in accordance of Safe Drinking Water Act by EPA.

MATERIAL DESIGNATION

ASBW	International	EN	UNS	JIS	Further Restrictions
B23	-	-	-	-	-

REFERENCE CHEMICAL COMPOSITION IN % (MAIN ELEMENTS) *

Material	Cu	Pb	Ni	Fe	As	Sn	Al	Bi	Zn	Other elements
B23	58,0	0,2	0,2	0,2	-	0,2	0,03	0,7	Rem.	≤ 0.2 %

* Deviations from these values may occur within the restrictions of the relevant standard specifications.

FABRICATION PROPERTIES

FORMING

Machinability (CuZn39Pb3 = 100 %)	90%
Cold Workability	Poor
Hot Workability	Excellent

JOINING

Resistance Welding (Butt Welding)	Fair
Inert Gas Shielded Arc Welding	Not Recommended
Gas Welding (Most Commonly Oxyacetylene)	Not Recommended
Hard Soldering	Good
Soft Soldering	Excellent
Brazing	Good

POLISHING

Mechanical	Good
Electrolytic	Fair
Electroplating	Excellent

HEAT TREATMENT

Melting Range	885 – 950 °C
Hot Working	630 – 730 °C
Soft Annealing	420 – 580 °C Duration: 1 – 3 h
Thermal Stress Relieving	180 – 280 °C Duration: 1 – 3 h

PRODUCT STANDARDS

Rod	EN 12164* EN 12165*
Section	EN 12267*

*Despite of the alloy B23 is not present on the standards EN12164/65/67, ASBW B23 rods ensure all the major characteristics that are present on those standards, granting all necessary properties for a smooth and clean manufacture.

CORROSION RESISTANCE

Machining brass is quite resistant to organic substances and to neutral or alkaline compounds. In comparison, homogeneous α -brass has a much more satisfactory corrosion resistance due to its microstructure. As for the stress corrosion cracking and dezincification, specially under conditions as warm, acidic waters and ammoniacal atmospheres, they should be taken into consideration, even more when the material is not under a stress relieved condition.

Physical properties*

Material Density [g/cm ³]	Electrical Conductivity		Thermal Conductivity [W/(m.K)]	Thermal Expansion Coefficient (0 – 300 °C) [10 ⁻⁶ /K]	Modulus of Elasticity [GPa]
	[MS/m]	[% IACS]			
8,41	14,11	25	107	20,5	116

* Reference values at room temperature

FINISHING AND PACKAGING

Bar ends	Marked according to customer's specification
Bar surface	Standard machining rods: bright, stripped surface Standard stamping rods: Uniform surface
Packaging	Size range up to 10 mm: The rods are packed loose in a wooden box and protected with oiled paper (net weight of approx. 500 kg). Each box is strapped with 4 steel straps to ensure material integrity during shipping. Size range > 10 mm: ASBW machining rods are supplied by standard in bundles either of approximately 1.000 kg or 500 kg. Different bundle weights are also possible upon customer's request. Each bundle is steel strapped three times on cardboard and both ends are protected with litter, to ensure the material integrity during the transportation
Identification	Adhesive label on bundle strap: customer - number of customer's order - EN Standard of the material - ASBW material code and LOT number ensuring production tracking - rod length - ASBW's PO number - ASBW's Quality Approval Seal

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For further detailing on technical aspects such as material condition, machining, mechanical data, temper
selection through contact to our technical personal.



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