

BRASS ALLOY CW626N

Free cutting and forging brass in the form of rod. The alloy has very good dezincification resistance and machinability. The hot forgeability is also good. The alloy is listed and approved according to the 4MS list for use in Drinking Water in EU.

Composition

CW626N	Cu	Zn	Pb	Sn
Limits	64,0-66,0%	Rest	1,2-1,5%	≤0,3%

Fe	Al	Ni	Mn	As	Others*
<0,1%	0,8-0,9%	≤0,2%	≤0,1%	0,02-0,08%	<0,02%

*According to 4MS

Standardization

The alloy is equivalent to the international norm

CW626N	CuZn33Pb1,5AlAs
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The chemical composition is close to the composition in CW625N but has slightly higher copper and aluminium contents.

The alloy, CW626N, is used for extruded products according to following standards.

SS-EN 12164, Rod for free machining purposes
 SS-EN 12165, Wrought and unwrought forging stock
 SS-EN 12167, Profiles and bars for general purposes

Microstructure

The structure of the material is mainly α -phase together with lead phase. Some β -phase may occur. The material is dezincification resistant.

Examples of use

The alloy is used for functions where there is a request for dezincification resistant brass, for example all applications for drinking water.

Rods in alloy CW626N can be used for the same applications as rods in alloy CW602N (CW602N is not allowed in products for drinking water applications according to the 4MS list).

Alloy CW626N fulfils the same requirements as CW602N and CW625N regarding the mechanical properties and dezincification resistance.

Heat treatment

Stress-relief annealing. Temperature 330-350°C. Time 1-2 hours (max). Stress-relief annealing should be carried out after all cold working which gives high residual tensile stresses in the material. It may also be justified after machining. Stress-relief annealing eliminates the risk of stress corrosion cracking caused by internal stresses.

DZR Heat Treatment. Temperature 500-550°C. Time 1-2 hours. The temperature must not be exceeded if the requirements in the sanitary water standard for dezincification resistance shall be met.

Dezincification resistance

The alloy is dezincification resistant, according to ISO 6509 and AS 2345-2006, appendix C.

Copper is a relatively noble metal. Copper and its alloys therefore show little tendency to react with the environment. As a result of this, the copper materials generally have good corrosion resistance. However, corrosion may occur under unfavorable conditions. The type of corrosion which may occur depends on both the environment and the composition of the alloy.

Corrosion types	Corrosion resistance	Comment
Stress Corrosion Cracking, SCC	Satisfactory	This type of corrosion only occurs in the simultaneous presence of high stresses in the material and a corrosive medium containing ammonia and moisture. (See Heat treatment.)
Dezincification, DZR	Very good	
Erosion corrosion	Quite good	

Machinability

High surface quality is easy to achieve. The chip breaking properties are good and the alloy is suitable for machining in automated machines.

Mechanical properties

CW626N from Nordic Brass Gusum meets and exceeds the quality demands defined in the standards. To give an idea of the mechanical properties some empirical values, according to the material grade "M" in the EN standard, are listed below. These values are to be considered as guideline values for the delivered material.

Property	Value	Unit
Rm, Tensile strength	~400	MPa
Rp02, Yield strength	~300	MPa
A5, Fracture elongation	>30	%
Brinell hardness	~110	HB