

A high-speed photograph of water being poured from a chrome faucet. The water is captured in mid-air, creating a dynamic, flowing shape. The background is a clean, light blue gradient. The faucet's spout is visible at the top right, and the water is falling towards the bottom left.

DIEHL
Brass Solutions

**ECOMERICA – LOW-LEAD
BRASS ALLOYS**

LOW-LEAD BRASS ALLOYS FOR DRINKING WATER INSTALLATIONS

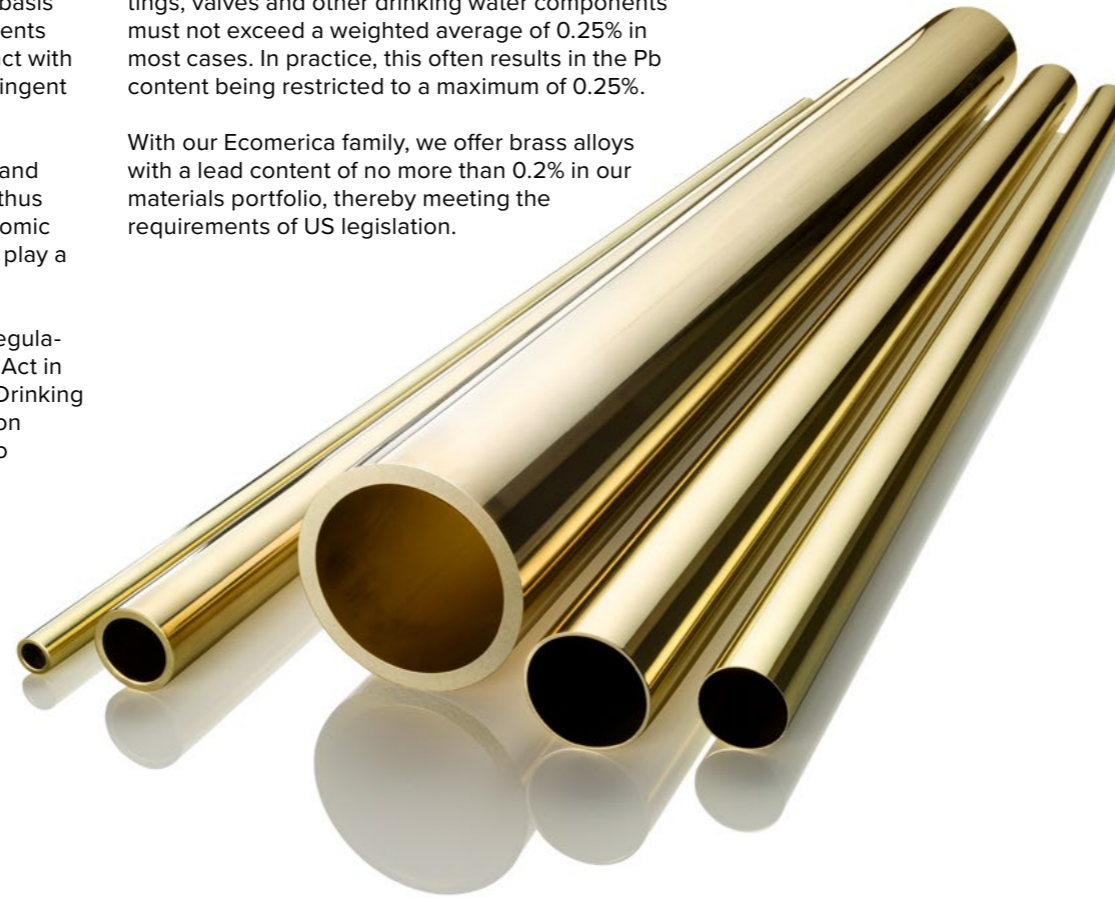
Drinking water is our most important essential nutrient – our source of life – and thus the basis of our health. For this reason, the requirements relating to materials which come into contact with drinking water are becoming ever more stringent worldwide.

The correct selection of suitable materials and products for drinking water installations is thus extremely important. Here, technical, economic and especially hygienic and health aspects play a major role.

In the United States of America, all this is regulated nationwide by the Safe Drinking Water Act in conjunction with the Reduction of Lead in Drinking Water Act. Here, the requirements placed on materials and components which come into contact with drinking water are defined.

For example, the proportion of lead in pipes, fittings, valves and other drinking water components must not exceed a weighted average of 0.25% in most cases. In practice, this often results in the Pb content being restricted to a maximum of 0.25%.

With our Ecomerica family, we offer brass alloys with a lead content of no more than 0.2% in our materials portfolio, thereby meeting the requirements of US legislation.



Composition (mass percentage, reference values)

	ECOMERICA® 062	ECOMERICA® 057	ECOMERICA® 013	CUPHIN® 430
Cu	63.3	58	60.5	76.0
Pb	< 0.2	< 0.2	< 0.2	≤ 0.09
Zn	remainder	remainder	remainder	remainder
Other elements	As = 0.09	-	-	P = 0.05, Si = 3.0

Material Designation

Diehl Metall	ECOMERICA® 062	ECOMERICA® 057	ECOMERICA® 013	CUPHIN® 430
DIN EN Symbol	CuZn38As	CuZn42	CuZn40	CuZn21Si3P
DIN EN	CW511L	CW510L	CW509L	CW724R
UNS	C24453	-	C27450	C69300

Mechanical Properties: (reference values)

	ECOMERICA® 062	ECOMERICA® 057	ECOMERICA® 013	CUPHIN® 430
Tensile strength R_m	400 MPa	500 MPa	450 MPa	700 MPa
Yield strength $R_{p0.2}$	250 MPa	330 MPa	290 MPa	410 MPa
Elongation A5	30%	20%	25%	25%
Brinell hardness	120 HB	150 HB	130 HB	180 HB

Corrosion Resistance

	ECOMERICA® 062	ECOMERICA® 057	ECOMERICA® 013	CUPHIN® 430
Dezincification-resistance ¹⁾	yes	no	no	yes
SCC resistance ¹⁾	yes, with special measures	yes, with special measures	yes, with special measures	yes

¹⁾values are based on the relevant test standards.

Processing Properties

	ECOMERICA® 062	ECOMERICA® 057	ECOMERICA® 013	CUPHIN® 430
Machinability	50	70	50	80
Hot workability	fair	very good	good	very good
Cold workability	good	less good	fair	fair
Polishing mechanical	very good	very good	very good	good
Polishing electrochemical	good	good	good	good
Electroplating	very good	very good	very good	good

The table provides an overview of the most important properties of our lead-free materials. For further support, please feel free to contact our experts.



ECOLOGICAL ASPECTS

ECOMERICA alloys can be integrated into existing recycling systems. From an economic standpoint, however, they should be recycled separately.

In the long term, this is the only way to avoid having to resort to expensive primary metals in the manufacturing process.

Besides the low-lead **ECOMERICA**® materials, our range also includes **CUPHIN**®, which even surpasses the requirements of US legislation and limits lead content to a maximum of 0.1%.

CUPHIN® also combines a number of other important properties for drinking water applications. For example, good machinability can be combined with good dezincification resistance. High strength combined with high elongation allows greater design freedom, which can be used, for example, to optimize design space. **CUPHIN**® should be recycled separately.



Based on the intended application, you can download all relevant specifications from our website. In our material specifications you will find a list of the physical, thermal, mechanical as well as resistance properties. If you have any questions on the materials and the processing thereof, please feel free to call our experts or send us your inquiry directly.

Your Contact Partner:

**Diehl Brass Solutions
Stiftung & Co. KG**

Phone +49 911 5704-0

Fax +49 911 5704-245

Email: dbs-sales@diehl.com

www.diehl.com/metall