Bundesanstalt für Materialforschung und -prüfung

CERTIFICATE

BAM/ZBF/002/25 1st version

Hereby it is confirmed by the BAM Certification Body, that the material

Beryllium-Copper Alloy of the manufacturer **EGA Master S.L.** **Zorrolleta 11, Jundiz Industrial Estate** **01015 Vitoria** **Spain**			
for impacts against	☐ ☒	**steel** **concrete**	
with a maximal impact energy of	**31**	**Nm**	
in potentially explosive atmospheres with the fuel gases	☒ ☒ ☒	of explosion groups I, IIA, IIB acetylene of explosion group IIC	Explosion groups according to DIN EN ISO/IEC 80079-20-1:2020-09

meets the requirements of **BAM Standard operating procedure StAA-GAS-005 „StAA zur Schlagfunkenprüfung von Werkstoffpaarungen“** approved April 2023 and thus non-sparking tools made of this material are appropriate for use in potentially explosive atmospheres of zone 1 and/or 21 (in accordance with the European Directive 1999/92/EC) for the fuel gases listed above, if the terms and conditions set out in the annex to this certificate are complied with.

The certification is based on certification contract **BAM-ZBF-0005-2024-EGA** dated 6th May 2024 and comprises according to standard DIN EN ISO/IEC 17065:2013 a design-type test with the manufacturer's declaration of conformity (BAM Certification system I).

The materials certified by BAM may be labelled with the certification mark “BAM Design-type tested” and/or “BAM Baumustergeprüft”.

The certificate is valid until December 31st, 2028.

BAM test report 20017926 dated February 19th, 2021, and 25004504 II dated April 15th, 2025, as well as procedures no. BZS-GS/024/20, BZS-GS/014/24 and BZS-GS/024/24 are a constituent part of this certificate.

Bundesanstalt für Materialforschung und -prüfung (BAM)
Unter den Eichen 87, 12205 Berlin, **April 30th, 2025**

By order 30.04.2025

Dr. J. Sunderkötter
BAM Certification Officer

Bundesanstalt für Materialforschung und -prüfung (BAM) BAM

By order

D. Grasse
BAM Assessor

Please check this certificate's validity in our Certification Register:
https://netzwerke.bam.de/Netzwerke/Content/DE/Downloads/Bzs/Zertifizierungsregister.html

Conditions for use of the certified material

The certification of the material **Beryllium-Copper Alloy** is only valid if the following terms and conditions are met.

Already smallest modifications of the properties of the material and the impact partner can alter fundamentally the spark pattern and thus the ignition probability. Thus, it is not possible to transfer the test results to other materials.

Certified material pairing

Material: Beryllium-Copper Alloy

The properties of this material shall comply with the material composition of the tested sample, namely:

- Material composition:
    - > 99.0 % Cu+Be+Co+Ni+Fe
    - 1.6 % - 2.3 % Be
    - > 0.2 % Co+Ni
    - < 1.2 % Co+Ni+Fe
- Hardness: 283-365 HB
- Reference: e-mail dated March 27th, 2025

Impact Partner: Screed concrete, reinforced

- Formulation: cement E290, superplasticizer 5.8 %, sands 0,1 to 2,0 mm, aggregates 2,0 to 8,0 mm, corundum 5.0 %. Reinforcement made of steel wire, recipe according to BAM Certification Scheme BZS-ZP/2.8 and test report 25004504 II dated April 15th, 2025

Use of the tools made of the certified material

During a possible impact of the tools on the above-mentioned impact partner the **maximum absorption of mechanical energy must not exceed 31 Nm**.

This corresponds to a falling height of 10 metres of a tool with a maximum weight of approx. **300 g**.

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Official statement of the BAM Certification Body (BZS) regarding the mode of operation in the framework of certification of material pairings for use in low sparking hand tools in the certification sector "Voluntary Certification" (ZBF)

In the course of 2016 the Technical Rule for general plant safety has been subject to a revision and our BAM experts have been involved in this work.
BG RCI in Germany is an authority member of the statutory accident insurance, being responsible for the chemical industry. The BG RCI regulations form an integral part of the technical rules of the Hazardous Substances Ordinance and, in Germany, they have a statutory character. The BG RCI regulations prohibit the use of tools in areas of zones 0 and 20 in case that few single sparks might occur during their application. These explanations have been integrated in the DGUV (Deutsche Gesetzliche Unfallversicherung) regulations since 2017 and BAM exclusively make reference to these specifications.

As a consequence BAM has been reviewing its practices and has come to the conclusion that, in order to improve the processes, **certification can only be granted for zone 1/21**. Our experience from former testing has shown that it is highly improbable that no sparks occur during the testing procedure and that the materials in general are appropriate for zone 1/21.

Since the use of the certified materials in zone 0/20 does not give rise to immediate risk, all the formerly issued certificates (valid until 2020) are protected and need neither to be withdrawn nor amended.

Berlin, 2018-09-10

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Dr. R. Schmidt

Dr. R. Grätz

BAM-Zertifizierungsstelle
(BZS)