liquid bright gold resinate

GG Q 3/8-15% H for spray, brush

Heraeus Precious Coatings is a global manufacturer of precious metal decoration products for ceramics and glass. Heraeus profits from over 100 years experience in ceramic and glass decoration designs, which has always made the department a pioneer in the development of precious metal colours. Modern precious metal preparations have to meet high demands on different types of substrates – such as on porcelain, tiles, drinking glasses, flacons and bottles. Decorations have to achieve good mechanical and chemical resistance such as dishwasher durability.The products supplied by Heraeus Precious Coatings include: Bright gold and platinum products, silk-matt gold and platinum products, burnish gold and platinum products, lusters and metallo-organic preparations for technical use.

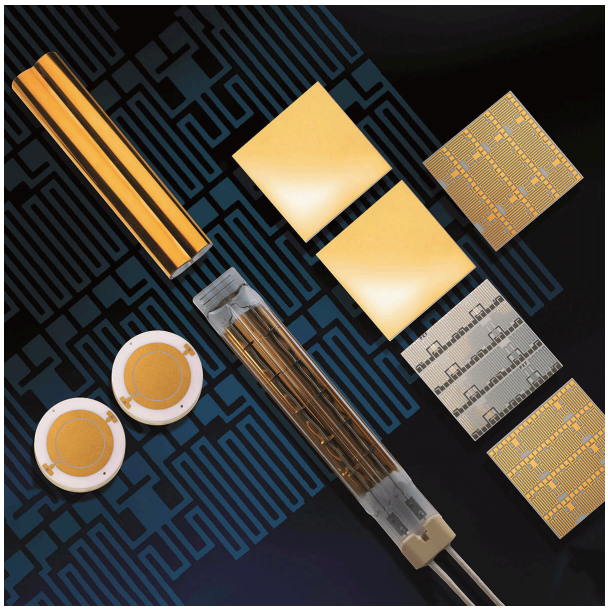
1 General information

GG Q3/8-15% H is a liquid metallo organic material for quartz glass. It is mostly on IR/heat reflective lamps and typically applied by spraying.

2 Standard firing range

Substrate	Firing range [°C]
quartz glass	780-820

The firing result depends on the firing temperature, the soak time and the total cycle of the firing as well as on the type of substrate. For an optimal firing result we recommend pre-tests under the users own individual conditions.



Directly to the product:

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3 Properties of the product

The major characteristics of a Heraeus precious metal preparation are determined by its production recipe. From each lot produced, we take a sample and check defined characteristics.

Form:
Liquid for brushing and spraying

Viscosity:
180 – 220 mPas (20°C, D=50s-1)

Solid content:
15,6% ±0,6%

Coverage:
Approximately 400cm²/g (fired film thickness at about 0,3µm)

3.1 Processing

We deliver GG Q3/8-15% H ready to use.

3.2 Storage

Liquid golds are subject to an ageing process. Therefore, we recommend using the material within 9 months. The material should be stored at room temperature (20°C). Cool storage – but no freezing – has a positive impact on the shelf life.

3.3 Consumption

The material consumption depends on the thickness of the applied precious metal layer. Under our conditions, the consumption is approx. 0,15 to 0,30g/100 cm².

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4 Application of the material

4.1 Preparation for the decoration

Work in a well-ventilated room. Good printing conditions occur at a room temperature of 20 to 25°C.

4.2 Preparation of the substrate to be decorated

Make sure that the surface of the object to be decorated is clean and dry. Dust, fingerprints and water condensation can affect the decoration while firing. Take care that the objects to be decorated are not taken from a cold store into a warm shop. A fine condensation film may occur, which is not visible to the naked eye. This results in firing disturbance (pinholes) in the fired precious metal decoration. Allow enough time so that they can adjust to the decoration room temperature.

4.3 Recommendations for the usage

- Do not shake the material before usage. The material might have built minor settlement, especially after a longer period of storage, which should not be shaken up.
- Had the material been stored in a fridge, please give it a bit time to adjust to the room temperature before starting to use it.
- Application by brush or spray. In case of spraying it is necessary to thin the material with about 25 to 30% of thinner V16. Recommended thinners for brush application are V35 or V39.
- Level at room temperature for about 5 minutes. Dry at room temperature for further 60 minutes.

4.4 Firing

- During the first heating phase the organic components of the preparation burn off. This process is completed at approx. 400°C. The gold film is formed. A constant, slow temperature increase, enough oxygen and sufficient ventilation are decisive for the quality of the fired precious metal decoration.
- The firing profile considerably influences the mechanical and chemical properties of the fired decoration.
- The rate of cooling has no major influence on the quality of the gold decoration, unlike the firing temperature and soak time. However, the firing process should not be stopped too abruptly after the soak time. If the rate of cooling is too fast, there may be a danger of damaging the article (cracks and broken glass).

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5 Complicance to regulation

The properties of the product are determined following standardizes laboratory test procedures. For optimal results the material should be fired in a profiled furnace supplied with dried, hydrocarbon and other contimaninant free air.

5.1 REACH (SVHC)

The material is REACH (SVHC) compliant according to the latest ** Annex XIV to Regulation (EC) of the European Parliament and of the council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (“REACH”) by European Chemicals Agency and its subsequent amendments; the material does not contain any substance listed in Annex XIV.

5.2 RoHS

The material is RoHS compliant according to the latest ** Directives (European Union) of Restriction of Hazardous Substances (“RoHS”) and its subsequent amendments (including the exceptions related to Pb)

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The statements concerning our products correspond to our current knowledge and experience. It is the obligation of the purchaser to examine the usefulness of the products in its intended use in each individual case. In order to prevent production losses the user has to test the preparations in connection with every other material being involved in the production process and has to be satisfied that the intended result can be consistently produced.