CEBEX
Scandinavian Ceramics

MANUAL

SE DK EN

Instruction of use

Ädelmetaller | Precious metals

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IMPORTANT

This manual is a general description of how to handle precious metals. Deviations from one product to another may therefore occur. Always check what applies to the product in question before use.

1.0 General

Burnish precious metals contains, besides the precious metal, also additives and coalescing solvents. All of our precious metals are lead, cadmium and mercury free.
Burnish precious metals results in dull, brown surface after firing but after polishing with a fiberglass brush or similar polishing materials the typical silky brilliance appears. Besides this optical effect, burnishing leads to compression of the precious metal particles in the surface and therefore to a distinctive improvement of the abrasion resistance.

As a rule, decorations produced with burnish preparations are more abrasion resistant than bright precious metals.
Our burnish precious metal are preparations for decoration of porcelain, Bone China andearthenware with different precious metal content.

Depending on the precious metal content and the thickness of the layer, a preciousmetal film of approx. 0.3 up to 1.0 µm forms after firing.

2.0 Application

Burnish precious metal preparations have a settlement of the matting agent, therefore the materials need to be shaken before they are used.

Our burnish precious metal preparations with a viscosity ready for use. They can be used without thinning, In some cases thinning cannot be avoided:

• After long processing
• During decoration of large areas and
• By brushing

In these cases we recommend adding 5 -15% of thinner V 35 or V 39.

2.1 Before you start

• Make sure you are working in a room with good ventilation and a room temperatur of approx. 20 till 25 °C / 66-77 °F.

• Make sure that the substrate of the object being decorated is clean and dry. Dust, finger prints and moist will affect the decore during the firing.

• Take care that the objects to be decorated is not taken from a cold store into a warm shop. A fine condensation film may occur, which is not visible for the naked eye. This results in faults (eg. pinholes) in the fired precious metal decoration!.

• Allow enough time for the material to adjust to the decoration room temperature.

2.2 How to decorate

Draw from the bottle only as much as you can consume in 15 or 30 minutes and close the bottle immediately. Consider that the solvent evaporates in air and therefore the viscosity increases.

Apply the preparation in a moderate thick layer onto the object to be decorated. A too thin layer influences the chemical and mechanical resistance of the fired decoration. In extreme cases it can lead to a reddish color of the surface without any precious metal character.

A too thick layer can lead to cracking or to a matt surface.

Ensure dust free surroundings during the application process and during drying. A wet surface is attractive to dust. After the drying, fire the decorated article as soon as possible.

3.0 Firing

During the heating up phase, first of all the organic components burn off. This process is complete at approx. 400°C (750°F) and the precious metal film is formed. A constant slow increase in temperature, enough oxygen and sufficient ventilation are decisive for the quality of the fired precious metal decoration.

The maximum firing temperature and the soak time have an important influence on the adhesive strength of the fired decoration.

As a rough thumb rule: The higher the firing temperature, the better the adhesive strength.

Substrate	Temperature
Porcelain	780-880 °C (1440-1620 °F)
Bone China	750-880 °C (1380-1620 °F)
Vitroporcelain	750-850 °C (1380-1560 °F)
Earthen-/Stoneware	650-740 °C (1200-1370 °F)

4.0 Dishwasher durable

All details as to whether decorations are dishwasher durable are to be regarded as approximate values, as test results vary widely according to the type of dishwasher, washing program, washing-up detergent, water quality and firing conditions.

Tests to find out whether finished decorations are dishwasher durable, roughly following the testwashing program of the Technical Standards Committee for Material Testing (Fachnormenausschuss Materialprüfung) in a Miele continuous dishwasher. If a decoration withstands 500 washing cycles essentially without damage, we designate it as dishwasher durable. If it withstands 1000 washing cycles, we designate it as dishwasher resistant.

5.0 Storage

Also burnish precious metal preparations are subject to an ageing process. As a rule, the viscosity increases with the storage time. Burnish precious metal preparations have a settlement of the matting agent, therefore the materials need to be shaken before they are used.

Therefore, we recommend to use the preparations within 6 months. They should be stored at room temperature (approx. 20°C /70°F). Storage at 7-14°C / 45-57 °F reduces the increase of viscosity during the storage.

6.0 Faults, possible causes and remedies

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 be ensured that the intended result can be consistently produced.

Fault	Possible causes	Remedies
Blurred contours, running precious metal	Too much thinning of the product.	Leave the bottle open for a while to enable some of the solvent too evaporate.
	Too much organic vapours in the kiln.	Reduce the no. of objects in the kiln.
Preparation shows bad application condition.	Viscosity is too high after long application or long storage.	Thinning the product with V35 or V 39.
Spots, firing disturbance.	Contaminations as dust, finger marks or water condensation.	Clean the substrate before decorating.
	1) Furnace atmosphere reduction. 2) Insufficient ventilation. 3) Too quick heat up at 200-400°C 4) Too many objects in the furnace.	1) Increase air addition. 2) Increase/open ventilation. 3) Reduce the heating up speed. 4) Reduce the no. of objects in the kiln.
Precious metal chips off after firing.	Contamination of substrate causes cracking.	Clean the substrate before decorating.
	Too thick application layer.	Reduce thickness of applied decore layer.
	Too much thinning of the product.	Reduce the thinning.
Low mechanical resistance of the precious metal decoration.	Too low firing temperature.	Increase the firing temperature.
	The decore layer is too thin.	Increase the decore layer.
Surface is too matt	Insufficient burnishing.	Additional burnishing.
Fine pin holes	Moist on the item before decorating (see “Application”).	Allow enough time for the ware to reach room temperature.