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Instruction Manual

Oxidising Flux Gosiba

Order no: 7669 - 7669A - 7669B

Coloring of silver, copper and copper based alloys.

Characteristics
Oxidising Flux Gosiba is a sulfurous lotion, which is especially suitable for nigrification of silver and silverings. You can also black nickel silver (alpaca), brass, red brass and copper, as well as brass-plated and copper-plated parts with this mordant (pickle). The coloring on silver and nickel silver is bluish/dark-grey, on copper (dependent on the after
treatment) brown, graphit-grey or deep black. The coloring on copper and red brass brown is up to greyish black. You can apply the coloring directly on silver,
copper and highly copper containing alloys. To use it on the highly zincic
copper alloys you need a acidulated copper (Sulfatlösung).

Technical equipment
Tank
The tank respectively the linings are of plastic, enamel, porcelain or glass.

Solution preparation
The mordant will be delivered liquid and ready for use.
To intensify the coloring of highly zincic copper alloys you need the
following:

German silver (nickel silver/alpaca)
Copper sulfate 10 g/l
Sulfuric, chem. pure, concentrated 3 - 20 g/l

Brass and tombac
Copper sulfate 50 - 200 g/l
Sulfuric, chem. pure, concentrated 3 - 20 g/l

Lower concentrated intensify dissolutions show a more light brown up to graphit-grey colour. However a higher concentrated dissolution shows a dark brown up to black shade.

Working conditions
Temperature: room temperature (20 - 25 °C)
Movement: In case of a short time of pickling in generally the movement
caused by the dipping is sufficent. In case of a longer pickling
time it is necessary to move the pickling goods.

Duration of pickling
Silver:
Silver needs a pickling time of 5-10 sec., until the parts obtain a evenly blue/matt-grey appearance. If the colouring is insufficient, the parts have to be pickled another 3-5 sec.

Silver plated items:
In an oxidising flux which is diluted with water 1:2, the pickling time is about 10 - 12 sec.

Copper:
For the colouring of copper it is necessary to five-fold the volume of the pickle functionally diluted with water. You have to dip into this diluted pickle for 10 sec., until the whole surface is covered by a deep black coating. If the pickling time is too long, it is not possible to obtain by subsequent brushing a brown colouring, only a graphit-grey shade. You can only obtain a brown colouring by scraping the whole surface in a wet condition. To obtain tintings of scrap copper, you have to revise with a soft felt wheel or a circular scratch brush.

Tombac:
High copper containing red tombac alloys with 90% Cu have to be treated like copper. If you have yellow tombac with only 72% Cu, it is possible that you firstly don't obtain a satisfying colouring. Only by subsequent dipping into an acidifieded copper sulphate dissolution it is possible to obtain intenser colours. If this intensity is still not sufficient it is appropriate to dip the items again into the oxidising flux following into the acidifieded copper sulphate dissolution and to repeat this bidirectional dipping, if necessary, as often as the items have an evenly matt, grey-black colouring.

However, in generally it is sufficient to repeat the treatment twice or three times. It is necessary to dip into each dissolution 0,5 - 1 sec. It is important to wash up the items well between the different dippings. Remains of copper sulphate dissolution don't have to be protracted into the oxidising flux and vice versa, remains of oxidising flux don't have to be protracted into the copper sulphate dissolution.

Brass:
Brass items or brass-plated items have to be dipped alternate into oxidising flux and acidifieded copper sulphate dissolution as often as necessary, until a sufficient colouring has been obtained. Each dipping don't have to last longer than 1 - 2 sec. For the alloy Ms63 it is necessary to use an intensification dissolution of 100 g/l copper sulphate and 10 ml/l sulphuric acid and to dip for
- yellowish brown 2 times
- light brown 3 times
- middle brown 5 times
- dark brown 7 times
- blackish brown 10 times
- grey 15 times

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After each dipping it is naturally important to wash up well the items to avoid the protract of one dissolution to the other.

German silver (nickel silver/alpaca):
German silver items have to be dipped first 3 - 4 sec. into the acidified copper sulphate dissolution and then after been washed up very well with water 2 - 4 sec. into the oxidising flux. The parts take a greyish blue colour like the colouring of the silver items.

Pre- and after-treatment

Pretreatment:
The parts have to be degreased well as usual.
It is preferable to pickle the copper and copper alloys in a sodium cyanide dissolution (100 g/l).

Note:
If an absolute adherent black colouring is wanted, it is preferable to dip first the degreased parts a few seconds into a dissolution of 2 g/l (Kaliumquecksilbercyanid), until the red copper colour turns into a whitish pale pink colour. After the parts have been washed up carefully, you have to colour the items black as per description with the oxidising flux.

After-treatment:
The pickled and afterwards dried items are firstly covered by a more or less uneven, dirty looking sulphide layer. You will get an acceptable colouring as soon as the items were treated with a soft brass wire. If necessary you have to shade the items with pounce (pumice) or a felt pad. To obtain a very fine tinting (for example on silver), it is possbile to use whiting (precipitated chalk) and then to rub the items afterwards with a dry leather.

Note:
Misshappend tintings can be eliminated with a strong sodium cyanide dissolution (200 - 500 g/l).

Working protective measures:
The bath liquid is alkaline and caustic !! During all working steps with this product, as well as during every contact with baths which were made with this product, it is absolutely necessary to wear safety glasses, protective gloves and protective clothing. The information sheets of the trade association as well as the associated safety data sheets have to be respected.

Sewage treating:
The dissolution is alkaline and contains sulphide. Flushwater and concentrates have to be disposed according to legal regulations.

Liability:
All informations concerning characteristics, application area and treatment of our products, are based on our current knowledge and experiences, nevertheless they cannot represent a guarantee for certain capacities. Our statements do not release the user to make his own examinations and attempts because the behaviour of our products is depending on the actual operational circumstances, which we neither know nor are able to influence. For this reason a liability for any damages or consequential damages is excluded.
The attention of property rights of third while using our products, fulfilment of regulations concerning limits of wastewater, environmental protection regulations, dispositions or restrictions belong to the general responsibility of the user. We will be pleased to be at your disposal for any technical consultancy under exclusion of all liability concerning damages and consequential damages.