

## **Directions for use Blacking salt AN / S**

In order to produce a blackening, a certain minimum concentration of salt is necessary, this is about 600 g/l, the boiling temperature of this lye is about 125 °C.

1kg of burnishing salt is dissolved in 1 litre of cold water, the dissolution must be done slowly, because the solution heats up strongly. Add the salt to the water in portions while stirring well. Ceramic or laboratory glass vessels are suitable for smaller parts, but unbreakable steel (ungalvanized!) or stainless steel (CrNi steel) vessels are better.

**Never use containers made of aluminium or zinc, these will be destroyed!**

As soon as the salt is completely dissolved, the burnishing bath is heated until it starts to boil. Then carefully dip the well pre-cleaned workpiece to be blackened into the bath.

ATTENTION ! first let all the salt dissolve completely, then heat it up ! Otherwise, undissolved salt particles on the bottom of the container can cause a delay in boiling, which results in violent boiling!

Use tongs etc. for dipping. The workpiece must be dry, adhering water can lead to splashing of the blacking lye! The dipping time is 15 - 20 minutes, depending on the desired thickness of the blackening. Then remove the workpiece, immerse it in warm water and rinse thoroughly. Pay particular attention to residues of the burnishing solution in places that are difficult to access, such as drill holes etc.

To avoid efflorescence on the burnished pieces, rinse and water very carefully, as already mentioned, the alkaline burnishing solutions tend to form a loose, white product due to the carbon dioxide in the air. To prevent this, the parts coming out of the bath are first immersed in cold water, then thoroughly rinsed in warm water. Hot water has considerably more cleaning power than cold water, so it is preferable if possible. An ultrasonic cleaning device is also an effective support. The danger of lye remaining is particularly high for parts with complicated shapes and hollow areas etc., so such parts should be rinsed and watered particularly thoroughly. It is best to boil such pieces additionally in water for about 30 minutes and rinse again.

The blackening achieves its corrosion protection value only in combination with high-quality oil, the oiling also darkens the colouring and considerably improves the optical effect. Preferably oils with higher viscosity should be used, i.e. not too thin-bodied. The thin-bodied oils do not remain on the bronzing as long as more viscous oils. The oiling should be renewed at regular intervals.

It is even better to boil the burnish in hot (approx. 110-120 °C) oil, which also removes any remaining traces of water. Impregnation with drying oils or with a paraffin solution is also possible, hard paraffin or microcrystalline paraffin should be used. Dissolve the paraffin in heated solvents (turpentine substitute etc.) and apply with a cloth, the burnished part can be warmed up a little bit for this purpose. After drying, polish with a soft brush. The paraffin is a pretty good protection.

If the temperature is too high and the concentration of the lye is too high, the bath will turn brown. In this case, let the bath cool down, dilute it and use it again.

Steel materials can be provided with surface treatments in many different ways. In particular, thermochemical processes such as carburisation (case hardening, carbonitriding), nitriding, boronizing and the processes that work with the diffusion of various elements such as Cr, Ti, Nb and V, sometimes significantly change the chemical composition in the uppermost material layers. This can lead to the formation of stains and insufficient colouring, irrespective of the base material which would otherwise be perfectly burnished. A reddish tint or the blackening can also be caused by such surface finishing processes.

In such cases the use of Brüniersalz S Spezial will give much better results, and the formation of the burnishing will also start at a much lower temperature. (from 125 °C) Even steels containing nickel can be burnished well.

Burnishing Salt S is only suitable for unalloyed or very low-alloyed material.

### **Safety Instructions**

**Never pour water into the hot blacking lye, the lye would splash immediately as a lot of water vapour is formed. Do not dilute the bath with water until it has cooled down below 80 °C. The burnishing bath can solidify at room temperature, but when it is heated again it becomes liquid again. It is therefore essential to use temperature-resistant containers!**

Ensure good ventilation when working and wear protective goggles and gloves! The blacking lye is very corrosive, therefore wear long clothing! Take precautions against the risk of stumbling!

R 22 Harmful if swallowed. R 36 Irritating to eyes R 52 Harmful to aquatic organisms. S 1 Keep locked up. S 2 Keep out of the reach of children.

Store in a dry place and protected from frost. Keep well closed.

Shelf life 5 years if stored appropriately.

DANGER!



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