Access Chemicals Ltd
Analysts & Consultants

Chemical Blacking Salts

Chemical Blacking Salts provide a traditional method of achieving an excellent black finish on steel, suitable for hand tools, instruments and other small machine parts. The working solution is easy to maintain as analysis is simply done by temperature evaluation.

Solution make up

To make a working 100 litre solution, **80 kg** of Chemical Blacking Salts should be added carefully to **60 litres** of water.

Equipment

A plain welded steel tank, fitted with stand and gas burners, or other means of heating the solution, should be used. Fume extraction should be provided. A heavy duty stainless steel thermometer is required.

Solution Preparation

The tank should be half filled with cold water and the blackening salts carefully added whilst stirring. **WARNING!** The solution will become hot as the salts dissolve. Only when all of the salts have been added should heat be applied. The solution should simmer between **137** and **142ºC**. If the solution boils vigorously below this temperature, it is too weak and should be strengthened by the cautious addition of salts until the correct simmering temperature is reached.

If the solution simmers above 142ºC, it is a sign that the solution is too concentrated and a little water should be **very cautiously** added. Great care must be taken when adding water to a working solution, which should be trickled down the side of the tank, a little at a time, otherwise spluttering will occur. If the operator is inexperienced, it is better to cool the bath to about 99ºC before dilution.

Operation

Place the articles in steel baskets and degrease in a hot solution, such as AC 115 or AC 99 (Contact Access Chemicals on 01827 – 289000 for more details on degreasing chemicals), swill through two water swills, then immerse in boiling water and allow to dry. Immerse cleaned articles in the oxidising bath for 10 to 15 minutes, according to their size and weight. Light parts, which soon attain the necessary temperature, may however, only require 5 minutes immersion.

After blackening, swill the articles in warm, then cold, water and then, finally, in clean boiling water, so that they dry spontaneously in air. The articles should then be immersed in a mineral oil based preservative for a minute or so, afterwards, removed and allowed to stand until the surplus oil has drained from them.

Caution

When re-heating the oxidising solution after it has been allowed to become cold, great care must be taken to heat it up slowly, breaking up the cake of sediment at the floor of the tank with an iron bar. The bath should be stirred several times whilst being brought up to temperature.

Health and Safety

Always read the material safety data sheet (msds) on this product before using.

This product, in its packed form is corrosive and mildly toxic. Care should be taken to avoid contact with the skin and eyes by wearing suitable protective clothing.

The working solution of Chemical Blacking Salts is very hot and severe burns will occur if contact with this substance is made with the skin or eyes.

Chemical Blacking Salts – UN: 2923 – Corrosive Solid, Toxic, NOS. Class: 8, Packing Group / Transport Category II.

Effluent

It is recommended that wastewater treatment be carried out to conform to the requirements of the local authority. Advice on how to meet these requirements, once known, can be obtained from Access Chemicals Ltd.