



# Bernite 45

Bernite 45 will quickly and effectively dissolve flux residues and heat scale on both ferrous and copper alloy metals. Plated metals are much more porous and can be damaged by the acid in the product. It will dissolve in a matter of minutes the glasslike flux buildup normally found after brazing or soldering and will permit effective part cleaning right on the production line. Bernite 45 will eliminate the problems of using strong acids or the expense and difficulties of using abrasive processes. In addition, Bernite 45 will also remove rust, mill and heat scale

## Features & Benefits

High detergency	Fast acting; Higher productivity
Versatile	De-flux, de-rust, descale in one step; Higher productivity
No complexing agents	Easy wastewater treatment

## Operating Conditions

For Bernite 45 to be effective, heat is required. This may be accomplished in one of two ways. The more effective method is to add Bernite 45 to the quench water where the heat of the brazed metal will maintain adequate temperature. This compound may also be added to a water solution in a heated tank and used away from the brazing area when immersion in the quench solution is impractical or when the parts have cooled.

Bernite 45 is supplied as a dry powder and is prepared by adding to water in the ratio of 10 ounces to the gallon at a temperature of 165°F to 180°F. When used as a post brazing quench bath it is sometimes advisable to start with a heated solution so that the first pieces processed will gain the full effect of the chemical action. The heat of the brazed parts will then maintain adequate bath temperature.

Regardless of method of application, a Stainless Steel (316), polyethylene container, or otherwise lined tank should be used. Immersion in this solution will vary from one to three minutes or longer depending upon the amount and accessibility of the flux and heat scale residues. There are no changes in critical dimensions even after a few hours' immersion. Periodic additions of Bernite 45 will maintain the solution at optimum strength (pH 0.5 - 2.5). The amounts of these additions will depend upon the total amount of parts and the volume of solution used.

The quench solution should be changed daily or when it has become contaminated by the flux or other residues. On occasion some steels may rust over a period. This can be eliminated by dipping the metal into a solution of Bernite 136, rust inhibiting compound.



In that Bernite 45 is a complex of add salts one should avoid breathing the dry dust which may cause irritation of the nose, throat and skin. It is also suggested that rubber gloves and aprons be worn.

## Titration Method

1. Pipette a 10 mL sample into 250 mL Erlenmeyer flask.
2. Add 50 mL of water and add 5 - 10 drops of Methyl Orange indicator.
3. Titrate with 0.1 N Sodium Hydroxide until solution turns from red/orange to yellow.
4. Record mL 0.1 N used.

Calculation

$$\begin{aligned} \text{Concentration (g/L)} &= \text{mL } 0.1 \text{ N NaOH} \times 1.54 \\ \text{Concentration (oz/Gal)} &= \text{mL } 0.1 \text{ N NaOH} \times 0.206 \end{aligned}$$

## Test Kit Method

1. Fill sample bottle  $\frac{1}{4}$  full of water.
2. Using the syringe provided, measure 1 mL of solution to be tested and add to sample bottle.
3. Add 5 to 10 drops of Methyl Orange indicator.
4. Add 0.72 N Sodium Hydroxide test kit solution dropwise to sample bottle while mixing, until the solution turns from Red to Yellow.
5. Record number of drops used.

Calculation

$$\text{Concentration (oz/Gal)} = \# \text{ Drops } 0.72 \text{ N NaOH} \times 0.625$$

## Caution

Use adequate exhaust systems for proper ventilation. Do not use on plated metal surfaces. It will dissolve zinc. Aluminum and plated metals such as chrome.

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## Product Bulletin

Product Name: Aquapure ACP

Product Code: 2601051

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