KEM BLACK

BLACK OXIDE COATING FOR FERROUS METALS
MIL-DTL-13924E CLASS 1

Description

KEM BLACK is an alkaline product in powder form which produces a durable, gleaming or matt, black or bluish finish on iron and steel parts for decorative effect and corrosion resistance.

The finish produced by **KEM BLACK** neither increases or decreases the dimensions of the treated metals. The finish actually forms a part of the metal itself.

KEM BLACK meets the requirements of MIL-DTL-13924E, CLASS 1.

Process Instructions:

1o Stage: DEGREASING

Product : **K-2B or PH CLEANER-2-PLUS**
Concentration : 5-10%
Temperature : 70-80 °C
Immersion Time : 5-10 minutes

2o Stage: RINSE

Thoroughly rinse in clean overflowing water, preferably warm. A cascade rinse tank proving two rinses is advised at this stage.

3o Stage: BLACK OXIDE

Product : **KEM BLACK**
Concentration : 1200 grams per liter water
Temperature : 143 ± 2 °C
Immersion Time : 15-30 minutes (depending on desired results)

4o Stage: RINSE

Use stage 2

5o Stage: SEALING

Product : **HIB**
Concentration : 0,2 % (2 grams per liter water)
Temperature : Ambient
Immersion Time : 2 minutes

6o Stage: PRESERVE

Immerse parts in **WATER DISPLACER** (water-displacing rust preventive)

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GENERAL INFORMATION

Charging the tank

Carefully add the **KEM BLACK** powder to the cold water under constant agitation or stirring to insure dissolving. When **KEM BLACK** has been mixed and dissolved, heat the tank until 143 °C is reached.

Strict maintenance of the temperature is imperative.

Once a **KEM BLACK** solution has been prepared it is wise to remember two important facts:

1. Adding **KEM BLACK** salts will automatically increase the boiling point.
2. Adding water will automatically decrease the boiling point.

The **KEM BLACK** solution should be maintained warm or hot at all times. If solution is allowed to cool too much, the salts will precipitate out to form a hard cake. Then when the tank is reheated uneven heating will occur and the salts will "burn". Parts processed in "burnt" salts may not produce a satisfactory black finish.

If the tank is used only a portion of the day, maintain sufficient heating during idle hours to prevent solidification of the solution (70-90 °C).

The **KEM BLACK** solution remains effective if it used properly and only replacing drag out losses is necessary.

Control of the solution

Maintain the boiling point of the solution at 143 ± 2 °C. If the solution boils at a lower temperature than 143 °C, add **KEM BLACK** until the boiling point is established at 143 °C. If the solution boils at an upper temperature than 143 °C, add water until the boiling point is established at that point.

Protection of the solution

Do not use or immerse incompatible or reactive metals, such as aluminum, brass, copper, bronze or tin, cadmium and zinc plated parts. The solution will be poisoned and it will become unusable.

Safety

Avoid contact with skin and eyes. Wear protective clothing when handling. For further details see M.S.D.S.

Packaging

KEM BLACK is available in plastic pails of 25 Kg.