



# NOVACLEAN 4009

## 1. DESCRIPTION

**Novaclean 4009** is a high alkalinity liquid metal cleaner containing a high level of low foaming surfactants.

**Novaclean 4009** is suitable for spray and immersion cleaning of ferrous metals prior to phosphating, and also for cleaning and activating galvanised steel and aluminium prior to phosphating or chromate conversion.

## 2. HOW TO USE

Concentration	up to 4% v/v
Temperature	50 – 70°C
Time	up to 5 minutes

The actual concentration and contact time will depend upon the finish required. Aluminium and galvanised should be treated for the minimum time necessary to avoid excess dissolution of metal and smut formation.

## 3. CONTROL

To test the solution for concentration and activity, proceed as follows:

- (a) Pipette a 10 ml sample into a beaker. Add approximately 50 ml of water.
- (b) Add 3 drops of phenolphthalein indicator and 5 ml of 10% Barium Chloride solution.
- (c) Titrate using 0.1N Sulphuric Acid until colour changes from red to colourless.
- (d) Note number of mls of 0.1N Sulphuric Acid is the "Free Alkalinity Pointage".
- (e) Add 5 drops Methyl Orange Indicator.
- (f) Solution should turn yellow.

### 3. CONTROL

(g) Continue to titrate until colour changes to orange red.

(h) Note number of mls of 0.1N Sulphuric Acid is the "Total Alkalinity Pointage".

**NB:** Addition of Barium Chloride solution is necessary in spray systems to remove the false result given by dissolution of carbon dioxide from the air. It may be omitted for immersion tanks.

### 4. CALCULATIONS

The concentration of **Novaclean 4009** is calculated as:

"Free Alkalinity Pointage" x 0.5 = % by volume of **Novaclean 4009**. Often the effective concentration of the bath is simply expressed as the "Pointage".

In effective removal of oxide surfaces of metal, some metal is dissolved into the cleaning solution. If the level of dissolved metals is too high, the efficiency of cleaning may be reduced. An excessive level of dissolved metals is indicated when the Total Alkalinity Pointage is more than twice the Free Alkalinity Pointage. The solution should be maintained below this level by continuous or period overflowing of the bath.

### 5. SAFETY PRECAUTIONS

**Novaclean 4009** contains Potassium Hydroxide. Do not get in eyes, on skin or clothing. Avoid breathing spray mist. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Refer to the Safety Data Sheet for full details.

### 6. PRECAUTION

When handling, wear goggles or face shield and rubber gloves. While making solutions, add slowly to surface of solution to avoid violent spattering.

### 7. PACKAGING

**Novaclean 4009** is packed in 200 litre poly drums.

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