

**COMBINED SPRAY CLEANER AND PHOSPHATE PROCESS**

**APPLICATIONS:**

PIP-10 is a combined spray cleaner/ phosphate process, which is formulated to treat iron and steel surfaces prior to painting or powder coating. The use of PIP-10 will remove light oils and preservatives from pressed and fabricated components and provide an iron phosphate coating, which is an ideal base for organic coatings. PIP-10 is predominantly used for the treatment of ferrous substrates although up to 20% of aluminium and zinc may be processed without adverse effect. Where high proportions of light alloys are to be treated then PIP-10F should be utilized.

**EQUIPMENT**

Mild steel process tanks and pipe work can be used, although spray nozzles and pump components (impellers) should utilize Stainless steel (grade 316) to prevent excessive erosion.

**OPERATION OF PROCESS:**

The PIP-10 process is essentially a 3-stage sequence consisting of the following :-

**a) PHOSPHATE / CLEANER**

The normal operating parameters for the PIP-10 process are as follows: -

Concentration - 12-17 litres PIP-10 / 1000 litres of working solution for spray applications.

25-35 litres PIP-10 / 1000 litres of working solution for use by immersion.

Temperature - Approximately 30 EC by spray.

- Approximately 40E C by immersion.

Process time - 2 Minutes by spray, 5 Minutes by immersion.

It should be noted that the above parameters are the average but where higher levels of soiling are encountered it may be necessary to increase either concentration, temperature or times to produce optimum results.

**b) WATER RINSE**

Cold water spray rinse for approximately 1 minute. The water quality should be maintained by constantly overflowing the rinse.

**c) FINAL SEAL**

The use of a final seal, PIP-Seal will enhance the protective properties of the phosphate coating, the work should then be thoroughly oven dried.

**TESTING AND CONTROL**

Take a 10ml sample of the working solution, add a few drops of Phenolphthalein indicator, and then titrate with 0.1 M Sodium Hydroxide solution to a pink end point. A solution, which has been made up as per the above instructions, will titrate as follows: -

Spray: - 5 ml titre/ 15 litres / 1000 litres.

Immersion: - 10 ml titre / 30 litres / 1000 litres.

Replenishment should be made on a pro-rata basis in order to maintain the solution concentration within the required parameters.

It should also be noted that as oil and grease is removed from the components then a separation on the top of the PIP-10 tank will be noticed and this should be removed on a regular basis by skimming off.

**Paco systems**  
Broadridge Close  
Newton Abbot  
Devon TQ12 1YE

Tel: 01626 207064  
Fax: 08712 424345  
[www.paco-systems.co.uk](http://www.paco-systems.co.uk)  
[info@paco-systems.co.uk](mailto:info@paco-systems.co.uk)

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