

"EP Technology"®

Stainless Steel Electrocleaning, Passivating and Polishing System

Introduction

When stainless steel components are fabricated, welded, machined, cast or heat-treated, the surface will become oxidised and/or contaminated with iron which can result in premature staining and corrosion attack unless it is appropriately cleaned and passivated.

The traditional methods of addressing this are by either pickling in acid solutions or electropolishing.

Acid pickling and passivation is usually achieved by immersing the component in a bath of mixed Nitric and Hydrofluoric acids for a significant time. This process:

- Etches the material surface
- Poses significant OH&S issues
- EPA compliance costs
- Regular expensive bath monitoring
- Acid replacement involving neutralisation and disposal costs.
- Long processing times

Traditional electropolishing processes are effective methods of surface cleaning, which result in removing oxides and iron from the metal surface. They improve the Cr-Fe ratio of the surface layers and alter the surface appearance by smoothing (electrochemically polishing) the surface. These processes, while reasonably effective:

- Involve significant bath monitoring
- Costs for the regular top up
- Replacement of the solution
- EPA requirements for solution disposal.

The Electropolish - EP Technology® advantage....

Electropolish has developed a unique electrochemical process, which provides the very best method for the cleaning and passivation of stainless steel surfaces. In addition to cleaning the surface and removing weld discolouration, this process can also electropolish and electropassivate. It is fast, efficient compared with pickling and suffers none of the drawbacks of existing methods.

Due to the unique formulation and methods employed, the Electropolish technology requires:

- a) **No** ongoing top-up with acid or chemicals, which reduces **costs** and **removes OH&S concerns**.
- b) **No** acid waste disposal, thus there are no EPA disposal issues, it is **environmentally friendly**..
- c) The electrolyte is quite benign; it is **safe** to operate, so there are **no OH&S issues**.
- d) Minimal electrolyte monitoring, significantly **reducing time and costs**.
- e) Fast and simple operation with short residence times for **optimised productivity** and **reduced costs**
- f) Efficient and simple rinsing techniques **reduce costs**

Clean, Passivate & Polish

The benefits of using EP Technology® also include the ability to electroclean and Passivate effectively and rapidly without any noticeable etching or polishing of the component surface.

Excellent high finishes:

Electropolishing with EP Technology® provides the highest quality electropolished surfaces, along with excellent surface smoothing resulting in extremely high Cr-Fe ratios and capable of producing an RA improvement of up to 60%.

Proven, cost effective performance:

The EP Technology® process is well proven over the past 12 years with installations in Australia, New Zealand and USA. It is now being made available for Electrocleaning and electropassivation as well as electropolishing applications.

Safe and environmentally friendly:

The key benefit of Technology® is that it is safe, cost effective and environmentally friendly. It uniquely addresses both OH&S and EPA compliance costs, as well as bath monitoring and maintenance costs.

For further details on how to implement EP Technology® in your plant, contact Electropolish.....

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