

DESCRIPTION

A chrome purifying system is a unique electrolytic separation technique based on electro dialysis using diaphragm (Ion-exchange membrane) for the removal of impurities (such as iron, copper, nickel, aluminum, trivalent chromium, zinc, etc.). This process is also suitable for all types of chrome plating solutions including hard chrome and decorative chrome plating baths.

TECHNICAL DETAILS

Metallic impurities such as Fe^{2+} , Cu^{2+} , Zn^{2+} , Al^{3+} , Ni^{2+} migrate through the diaphragm to the cathode compartment. Cations are reduced at the cathode and hydrogen evolution occurs, raising the pH of the catholyte. As the concentration of hydroxyl ion (OH^-) increases inside the diaphragm, the metal hydroxides precipitate in the cathode chamber.



Source: Single Diaphragm Unit / P.M. Recovery Systems, Delhi

CASE STUDY

The system is installed in one of the chrome baths in M/s Prakash Enterprises, Chennai to test the efficiency of the system.

Company Profile

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|-----------------------------------|-------------------------------|
| Location | Chennai |
| Employees | 30 |
| Annual turnover | INR 1,00,00,000 |
| Main products | Hard chrome plating job works |
| Annual production capacity | 10,00,000 Nos. |

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TECHNICAL BENEFITS

1. Smooth deposition over the surface
2. Improved cathode efficiency
3. Improved plating rate
4. Decrease in electricity consumption
5. Reduction in covering power
6. Uniform deposit thickness
7. Reduction in peeling off
8. Increased tendency for burning

ENVIRONMENTAL BENEFITS

1. Reduced soil pollution
2. Water conservation
3. Less use of chemical for neutralizing

FINANCIAL BENEFIT OF CASE STUDY

| | |
|---------------------------------------|---|
| Investment amount | About INR 1,00,000 (will vary depending on the bath size) |
| Payback period | 2 Years (Anticipated) |
| Net savings per unit of output | Under study |
| Lifetime of investment | 3 Years |

FURTHER INFORMATION AND CONTACT

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