

# Prime Chemicals-Pakistan

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## PC-25 Anodizing Reformer

### Properties

- **PC-25** is a highly effective organic additive used in aluminum anodizing, particularly in Type III (hardcoat) and architectural anodizing.
- **Harder, Denser Coatings:** By controlling the aggressive nature of the sulfuric acid, **PC-25** allows for thicker, denser, and more wear-resistant hardcoat layers, especially on difficult-to-anodize alloys containing copper or silicon.
- **Temperature Flexibility:** It enables the anodizing bath to run efficiently at warmer temperatures (between -5°C and 25°C), reducing the massive cooling and refrigeration costs typically required for standard hard anodizing.
- **Better Dyeability:** **PC-25** baths improve the porosity structure of the anodic layer, which helps the aluminum absorb dyes more evenly and intensely.

### ***BATH COMPOSITION & OPERATING CONDITIONS***

SULPHURIC ACID (specific gravity 1.84)	150-200 g/l
Reformer PC-25	30 g/l
Temperature	-5°C to 5°C
Voltage	50 to 100V
Cathodes	Stainless Steel/Lead/Graphite
Anode to Cathode Ratio	1 : 1-1.5
Time (depends upon thickness required)	50 microns per hour

### ***IMPORTANT***

Hard anodizing (Type III anodizing) generally requires a voltage between **50V and 120V DC**, which is significantly higher than standard decorative anodizing (typically ≤18V).

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The exact voltage depends heavily on the setup:

**Initial Voltage:** Start low at **15V to 20V**. Applying high voltage immediately can cause "burning" (catastrophic dissolving of the aluminum).

**Ramping Up:** The voltage must be gradually increased throughout the cycle as the growing oxide layer increases electrical resistance. It will likely finish between **50V and 100V. (DEPENDS UPON THICKNESS REQUIRED)**

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