

PTC1™ Paint Test Cell



Description

The PTC1™ is a low-cost cell for electrochemical testing of flat metal specimens. Its simple construction and low-cost allow it to be used for long-term exposure tests.

The PTC1 was designed for testing of painted metal specimens using Electrochemical Impedance Spectroscopy with Gamry's EIS300™ EIS System. The cell is useful in testing the electrochemical characteristics and time to failure of coatings with Gamry's Rapid Electrochemical Assessment of Paint (REAP) Application Note. However, the cell is also useful in corrosion testing of bare metals in concentrated electrolytes or inhibitor solutions. It is not recommended for bare metal corrosion testing in poorly conductive solutions.

The cell's design is quite simple. A glass tube with an o-ring seal is clamped to the sample under test. The tube is filled with the test electrolyte and sealed with a rubber stopper. A Saturated Calomel Reference Electrode and a graphite rod counter electrode are mounted through the stopper.

Specifications

Dimensions

Volume Approximately 40 ml
Size Approximately 40 mm diameter by 120 mm high,
including electrodes

Metal Specimen

Size Disk Shape - diameter at least 50 mm
Square shape - at least 50 mm on a side
Thickness - between 1 mm and 1 cm

Tested area

Shape Circular
Area $14.6 \text{ cm}^2 \pm 5\%$ (typical)
Location Must be 2 cm or less from edge of specimen

Reference Electrode

Type SCE with porous Vycor junction
Size 9 mm diameter by 15 cm length

Counter Electrode

Type High Density Graphite Rod
Size 6 mm diameter by 12 cm length

Chemical Compatibility

Wetted Materials Pyrex, Ethylene/Propylene elastomer, carbon filled natural rubber,
porous Vycor, Teflon, graphite
Non-wetted materials Steel clamp, polypropylene, stainless steel, natural rubber

Parts Supplied

Quantity	Description	Part Number
1	Instruction Sheet, PTC1	900-00038
1	Cell Body, PTC1	930-00026
1	PTC1, Base Assembly	935-00039
1	Stopper, 2 hole, PTC1	935-00035
1	Clamp, PTC1	935-00036
1	Reference Electrode, SCE	930-00003
1	Counter Electrode, 6mm x 12 cm	935-00014

