





Green Energy

Bi-Polar Plates for Fuel Cells



Location	San Luis Potosí, Mexico
Environment	Outdoor
Grade/surface	444 2B
Quantity	250 gr per unit of 9.5 x 9.5 cm
Manufacturer	CIATEQ
Source of information	IMINOX

Fuel cells will need to become cheaper to produce if they are to become commercially successful. The Proton Exchange Membrane (PEM) fuel cell stack consists of a membrane electrode assembly, a bi-polar plate, seal and end plate. Among these components, the bi-polar plate is one of the most costly and problematic in the fuel cell stack. The bi-polar plate is a multi-functional component within a PEM fuel cell stack, whose primary function is to supply reactant gases to the gas diffusion electrodes (GDEs) through flow channels in the plate. The ferritic stainless steel grade 444 is an excellent material for manufacturing these plates. It is comparable to the austenitic grade 316 in corrosion resistance but it has a more stable price structure. Stainless steel bi-polar plates are coated with protective layers which increase corrosion resistance and have good interfacial contact resistance. Research has shown that both austenitic grade 316 and ferritic grade 444 work very well for the performance of these fuel cells.