

Sun light falling on the solar panel contain more than 50% of infrared rays which are converted in to heat instead of producing electricity. CO₂ gas has a good quality to absorb infrared rays. In view of this, CO₂ gas filled solar panel shall filter the infrared radiation improving the reliability, durability and safety of Residential Photovoltaic system.

The PV module will be filled with CO₂ gas between support board and translucent glass covering hermetically sealed in the factory and no periodic filling will be required throughout its life.

The CO₂ being a very good insulation material and having excellent property to extinguish electric fire will ensure safety of inhabitants in houses fitted with roof mounted solar panels. It shall also minimize damage to solar from hot spot which could occur any time on roof mounted PV panels.

Module will be laminated with a perforated sheet instead of plain sheet. Perforations in lamination sheet will improve thermal conductivity of the module assembly and will allow flow of heat transfer out of the solar panel. The perforation in lamination sheet will allow CO₂ gas to be in touch with solar cells for their protection against sparking, hot spot and insulation failure.

CO₂ gas is 1.5 times heavier than air, high gas density compared to air shall not allow ingress of moisture and air. In view of this, module components and solar cells shall be well protected from damage through corrosion or oxidation.

The CO₂ gas is identified as a greenhouse gas with zero GWP hence no safety regulations will have to be introduced in order to prevent its release into the atmosphere.