

Sodium Hypochlorite Electrolyser Plant (SHEP)

An electrolyser was retrofitted for on-site production of sodium hypochlorite (NaOCl, which is used as disinfectant). The electrolyser demonstrated with competitive energy efficiency with built in safety features made with all indigenous components and targeting small to medium level disinfection applications like hospitals, office areas, etc. The electrolyser can generate around 6g/L NaOCl under optimum operating conditions when aqueous 3% NaCl solution is used as feed with mixed metal oxide (MMO) coated titanium mesh as anode with cell efficiencies and specific power consumptions at par with industry standards. This 6g/L or 0.6% NaOCl concentration is quite sufficient for typical viral load for the targeted applications. However, the unit can also be operated to produce upto 8g/L of sodium hypochlorite if need be (with slightly higher specific power consumptions). The production capacity of the tested SHEP is about 25 litres for 8 hrs operation. The plant will be very much useful at remote sites. During the pandemic product from the plant had been used in house for general area sanitization. After rigorous testing the technology of the same was transferred to private firms through TT&CD.



Figure: Photograph of the pilot SHEP (left). Spraying of SHEP product for general area sanitization (right)