

Abstract: The charge storage ability and its stability in polypropylene(PP) non\_woven fabric electret used as an air filter material was discussed. The influence of temperature and environmental humidity on the charge stability was investigated. The role of material structure in the influence of humidity on charge stability was analyzed. It was found that the charge stability can be improved obviously by thermal treatment, including aging after charging at room temperature and charging at elevated temperatures. Experimental results demonstrate that PP non\_woven fabric electret shows very good charge storage lifetime in ambient atmosphere. The transport of detrapped charge is controlled by the slow retrapping effect