

COMPARISON OF DIFFERENT NEUTRALIZING METHODS BY IPA ON ELECTRET FILTER MEDIA

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It has been broadly demonstrated that electrostatic charges added to polymer fibers by creating electrets will improve particle capture abilities without increasing the pressure drop. Filtration applications require knowledge of the minimum efficiency provided by a filter (worst-case performance). In existing test standards, e.g. EN 779 and ISO 16890, isopropanol (IPA, in liquid or vapor phase) is used to eliminate electrostatic effects from filter media. There is few report about whether IPA liquid and vapor can fully discharge the electret media. Currently, there is a huge controversy in fiber charge characterization techniques for electret media. This study will develop a simple and reliable method to determine whether the filter is fully discharged. The neutralization effect of IPA liquid and vapor discharging will be compared. It was found that IPA vapor treatment showed better neutralization effect than IPA liquid immersion, since IPA liquid treatment can induce undesirable charges on fiber surface.