

### Effect of crushing process of polyurethane foams on acoustic property

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Polyurethane foams attract much attention in various industries due to their advantages, such as light weight and easy processability. Especially, their high porosity extends their applications in cushion, sound absorber, and thermal insulator field. Inside polyurethane foams, most cavities are conjunct with each other through pores. The types of pores play an important role in achieving high acoustic property of polyurethane foams because they are immediate causes of the obstacle of soundwave flows. The more interrupted the path of sound wave are, the more sound are absorbed in polyurethane foams. However, excessive blocking rather prevents the penetration of sound. Therefore, bursting the film on closed pores is advantageous to improve acoustic property of polyurethane foams. In this study, crushing process was introduced to break closed pores at various time frames. To analyze the effect of crushing process, the morphology of polyurethane foam was measured with scanning electron microscope, and acoustic properties were evaluated with an impedance tube.