Mater Sci Nanotechnol 2017, 1:2

Recycling of gel foam rubber waste as filler in natural rubber/styrene butadiene rubber (NR/SBR) blends for mats production

Ahmed A Mousa
Synthomer PLC, Egypt

Gel foam was used on a wide range in carpets backing production to give the tuft strength and to make it compact. The gel foam waste consists of a blend from NR/SBR in addition to amounts of $CaCO_3$. This waste was collected and recycled to work as filler in mats production. It was dried and grinded into particles with a size range from 45 to 75 microns and used as a replacement to parts of $CaCO_3$ filler in different ratios. The mechanical properties of prepared mats using recycled waste were studied and the surface was scanned using SEM. It was found that replacing $CaCO_3$ by waste rubber in ratios up to 5 and 7% has improved the mechanical properties at 3% ammonium acetate gelling agent. Moreover, it has provided better storage stability than $CaCO_3$. Reducing gelling agent to 2.5% has resulted in recycling high amount of this waste; up to 25%.and up to 60% by reducing the gelling agent to 2%. Reducing the ratio of the gelling agent and recycling of such waste are very cost effective. In addition, it helps in decreasing the acetic acid emission and enables the final product to have a good appearance.

ahmed.mousa@synthomer.com