

Thermal, mechanical and insulation properties of mineral fiber/silicone composites for fire-proof silicone rubber by ceramization

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Silicone materials have developed into a billion-dollar industry, and are used in many applications in engineering industry, industrial materials, electrical, and transportation industries.

Today, synthetic polymer materials are rapidly replacing more traditional materials such as ceramics, and natural polymers. However, the disadvantage of synthetic polymer materials compared with other materials is that polymers are combustible. As a flame retardant, PDMS gives outstanding advantages such as halogen-free flame retardant with very low mission of toxic gases, thus considered to be among the “environmentally friendly” category of additives.

In this study, two kinds of mineral fiber were incorporated in Silicone rubber with Pt Catalyst. Characterization were also performed in terms of mechanical properties, thermal properties, morphology and insulation properties.

Keywords : mineral fiber/Silicone composite, fire-proof, flame retardant, PDMS

Acknowledgement This work was supported by a grant (1711032791/KOITA-2015-7) by Korea Industrial Technology Association, Republic of Korea (2015)