

## Mechanical Properties of Humidity Absorbing Deteriorated DGEBA/MDA/SN/HQ System

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As the society becomes industrialized and informationalized, the consumption of electricity increased and the requirement of its stable supplying and reliability increased. So, many scientists have concentrated their efforts on developing new insulating materials and modifying the conventional insulating systems. We reported the impact resistance modified new epoxy resin system DGEBA(diglycidyl ether of bisphenol A)/MDA(4,4'-methylene dianiline) with SN(succinonitrile) as a chain extender. In this study, HQ(hydroquinone) as a cure accelerator was introduced into the system and the mechanical properties of DGEBA/MDA/SN/HQ system deteriorated by humidity

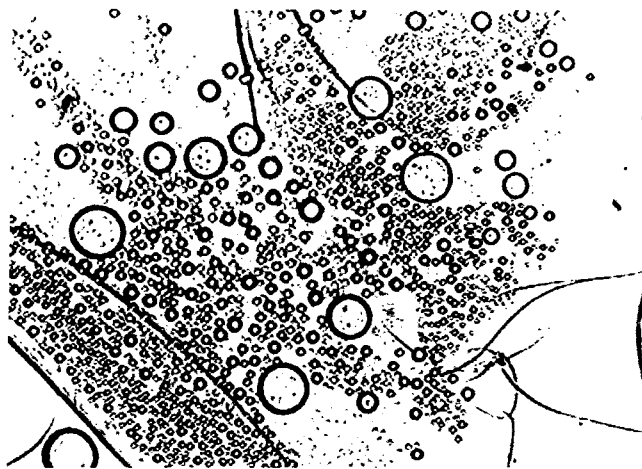


Fig. 1 Humidity absorbing deteriorated DGEBA/MDA/SN/HQ system with cracks and bubbles after 2 heat cycles(90°C(RH98%) and -20°C)

absorbing process were observed in terms of tensile properties and impact strength according to the heat cycles. The underground power distributing systems are operated under high humidity and high temperature. We considered this condition in deteriorating process. Fig. 1 shows the humidity absorbing deteriorated DGEBA/MDA/SN/HQ system with cracks and bubbles after 2 heat cycles.

[1] S. Maruyama, S. Kobayashi, and K. Kudo, *T. IEE Japan*, 113-A, 480(1993).