Pengaruh penambahan antimon (III) oksida (SB203) terhadap sifat isolator kabel berbasis polietilen ikat silang (XLPE) = Effect of antimony trioxide (SB2O3) addition on the properties of cable insulation based on crosslinked polyethylene (XLPE)

Ihsan Udin, author

Abstrak

[ABSTRAK
Bahan isolator polietilen ikat silang sangat umum digunakan dalam industri kabel listrik. Sifatnya yang mudah terbakar dengan nilai batasan indeks oksigen dibawah 18-19 % membuat bahan ini memerlukan perbaikan. Bahan antimon (III) oksida (Sb2O3) sangat umum digunakan sebagai aditif flame retardant pada bahan polivinil klorida dan polietilen ikat silang. Penelitian atas penggunaan antimon (III) oksida pada bahan polietilen ikat silang dilakukan dengan variasi komposisi Sb2O3 yaitu 2%, 4% dan 6%. Didapatkan bahwa nilai batasan indeks oksigen meningkat menjadi sampai dengan 22% dan kestabilan panas semakin meningkat. Efek negatifnya harus diwaspadai bahwa ternyata semakin tinggi penambahan Sb2O3 pada bahan polietilen ikat silang menyebabkan penurunan nilai resistifitas listriknya.
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ABSTRACT
Crosslinked polyethylene insulation material is very commonly used in electrical cable industry. Due to the highly level flammability of crosslinked polyethylene which have low limiting of oxygen index value between 18-19% make this material requires improvement. Antimony trioxide (Sb2O3) is very commonly used as a flame retardant additive in polyvinyl chloride and crosslinked polyethylene material to increase the limiting of oxygen index value. By applying the composition of Sb2O3 with the variation of 2%, 4% and 6%, we found that the limiting of oxygen index value increased up to 22% and the heat stability was improved. The negative effects should be aware because we also found that addition of Sb2O3 on crosslinked polyethylene materials led to a decrease in the value of the electrical resistivity., Crosslinked polyethylene insulation material is very commonly used in electrical
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