

gelatinized silicone resin and normally poly-condensated silicone resin is the same as the difference of vitreous and crystalline silica.

12. Studies on Silicone Resins. (IX)

On the Glass Cloth Laminates

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We reported on the molding products in the preceding reports. (This Bulletin, 22, 87 (1950)). After that, the silicone-bonded glass cloth laminates have been produced on trial and their electrical and mechanical properties have been measured.

By the silicone resin, glass cloths are sticked at 200–250°C under about 500kg/cm² pressure.

We found that our laminates had far stronger tensile strength than that of molding products and considerable heat resistance and good electrical properties as much as the molding products. And likewise they are able to drill and file.

(1) The insulating resistance is near to the value of non-alkali-glass and 10¹³ Ω-cm at 200°C.

(2) The arc resistance according to A.S.T.M. Standard shows 420sec, while molding products show 360sec and bakelite only 15sec.

(3) The dielectric strength measured in transformer oil is 12kv/mm at 60 cycles and 18kv/mm at d.c.

(4) The dielectric loss angle decreases as frequency becomes higher. At 1MC its values is 0.0070. By heating after ordinary preparation process it becomes smaller. The effect of catalysers—ethyl-borate, benzoic-peroxide and etc.—for the dielectric properties are little.

(5) The tensile strength is 700–800kg/cm².

(6) The relations between mechanical strain and temperature under a constant load were measured. These results showed that the curing temperature and time affected on these relation. The allowable temperature of these products are 250–300°C.

These properties promise the wide use of these products as the molding ones.

Above three reports—(VII), (VIII) and (IX)—are on the methyl-ethyl and methyl-ethyl-phenyl silicone resins which are being prepared on trial at the Laboratory of Shimadzu Mfg. Co., Kyoto.