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DEVELOPMENT OF A THERMAL FUSE

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ABSTRACT

In the case of a fire in a vehicle, an airbag system is a potential bomb. The gas-generating substance in an air bag system will slowly heat up to its ignition temperature at which point all of the substance ignites simultaneously. This problem can be overcome if a thermal fuse is used. The thermal fuse should be designed to ignite before the gas-generating substance and hence will prevent an explosion if there is a fire. With new gas-generating substances used in airbag systems, however, new demands are made on thermal fuses. This is because the new substances have lower ignition temperatures than earlier ones. In order to get a satisfying effect from a thermal fuse, its ignition temperature should be a great deal lower than that for the gas-generating substance. The earlier thermal fuse developed by Bepab and currently in use by Autoflator has an ignition temperature between 200 and 225 °C. This value is too high for new gas-generating substances and for this reason a new composition for the thermal fuse had to be developed.