THIOL-ISOCYANATE CHEMISTRY FOR AUTONOMOUS SELF-HEALING OF EPOXY RESINS

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Keywords: self-healing, thermoset, epoxy, thiol-isocyanate

ABSTRACT

In order to develop better performing and longer lasting epoxy thermosets and composites, novel healing agents were inserted into microcapsules and these were then dispersed in the epoxy matrix. The fast and efficient thiol-isocyanate chemistry was screened by means of kinetic studies and mechanical testing for the potential use as the main network forming reaction during self-healing, leading to the improved healing efficiencies compared to most of the results obtained in literature so far [1]. Furthermore, certain conditions necessary for industrial applicability were met, such as a low toxicity, low cost and stability at both ambient and epoxy processing conditions.

REFERENCES

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