

## **Synthesis and properties of oligohexamethyleneguanidine palmitate for the modification of organosoluble epoxy compounds**

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*The palmitates of oligohexamethylene guanidine have been synthesized and characterized. We have established their more pronounced solubility in comparison with hydrochlorides in epoxy oligomers, i.e. glycidyl ethers of diphenylolpropane Epikote 828 and oligoxypropylene polyol Laproxide 703. As a result a chemical interaction occurs between the starting materials and palmitate of oligohexamethyleneguanidine, leading to the formation of adducts of epoxy oligomers with oligohexamethyleneguanidine, fully compatible with the original oligomers. It is recommended to use oligohexamethylene guanidine for epoxy compositions with aliphatic hardeners, for which strict requirements for high glass transition temperature are not required. The temperature of the beginning of chemical interaction of epoxy oligomers with salts of oligohexamethyleneguanidine and palmitic acid is much higher than the reaction temperature of epoxy oligomers with aliphatic amine hardeners. This allows the introduction of oligohexamethylene guanidine into epoxyamine compositions by first separately preparing adducts with epoxy oligomers that can be used as a modifying biocide additive for conventional formulations (corrected for the stoichiometric content of the hardener).*

**Keywords:** epoxy resin, diamine, oligohexamethyleneguanidine, palmitate, solubility, curing, bactericidal coatings, mechanical engineering

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