Evaluation of physical properties of cryogenic two-component urethane adhesives

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Cryogenic adhesives are used to transport and store LNG (Liquid Natural Gas) and LH_2 (Liquid Hydrogen) at temperatures between 4 and 103 K. The most economical cargo containment system for LNG carriers is the Membrane Type. It has a double structure that forms the primary and secondary barriers by attaching insulation and metal membranes to the inside of the cargo hold. In this study, a method for evaluating physical properties at cryogenic temperatures was established for future localization of urethane adhesives and the curing behavior of two-component urethane adhesives according to curing conditions and physical properties at cryogenic temperatures were evaluated.