

Abstract**A Process for Producing Improved Palm-based Flexible Polyurethane Foams**

5 The present invention describes the production and compositions of improved palm-based water blown flexible polyurethane foams (PUFs). Polyols is the main raw material, and preferably produced from natural resources and more preferably from palm oil. The phthalates function is to improve the cross linking within the polymer structure are selected from the group of alkyl aryl phthalates and dialkyl phthalates.

10 Isocyanate is used for flexible polyurethane foams (PUFs) production and the preferred isocyanate according to the present invention is modified MDI, which contain modified toluene diisocyanate and carbodiimide modified diphenylmethane diisocyanate. However, toluene diisocyanate (TDI) or diphenylmethane diisocyanate can also be used. Besides phthalates, other additives are also incorporated. The additive is a

15 combination of silicone surfactant, amine catalyst, tin catalyst, flame retardant and chain extender. The functions of these additives are to control and modify the final polyurethane polymer. In addition to the polyol and isocyanate, another main ingredient in polyurethane formulation is blowing agent. In this process, water is used as chemical blowing agent, which reacts with isocyanate to form unstable carbamic acid, which

20 decomposes to urea and carbon dioxide. Carbon dioxide provides the expansion or generates the cell structure of foam.



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