

ABSTRACT**METHOD FOR PRODUCING POLYETHER CARBONATE POLYOLS**

The present invention relates to a method for producing polyether carbonate polyols, wherein: (i) in a first step, (a) carbon dioxide and propylene oxide or (b) carbon dioxide and a mixture of propylene oxide and at least one further alkylene oxide in a ratio by weight of > 90:10 are attached to one or more H-functional starting substances in the presence of at least one DMC catalyst; (ii) in a second step, the reaction mixture obtained from step (i) is (ii-1) first chain-lengthened with a mixture containing propylene oxide (PO) and ethylene oxide (EO) in a PO/EO ratio by weight of 90/10 to 20/80 in the presence of at least one DMC catalyst, (ii-2) then the resulting mixture is chain-lengthened with a mixture containing propylene oxide (PO) and ethylene oxide (EO) in a PO/EO ratio by weight of 60/40 to 2/98 in the presence of at least one DMC catalyst; and (iii) the polyether carbonate polyol resulting from step (ii) is chain-lengthened with ethylene oxide or a mixture of propylene oxide (PO) and ethylene oxide (EO) in a PO/EO ratio by weight of 5/95 to 0.1/99.9 in the presence of at least one DMC catalyst, wherein the portion by weight of EO in the mixture containing PO and EO in step (ii-2) is higher than the portion by weight of EO in the mixture containing PO and EO in step (ii-1). The invention further relates to polyether carbonate polyols obtainable according to this method and to the processing of the polyether carbonate polyols for producing polyurethane soft foams.