

ALIEN PROPERTY CUSTODIAN

METHOD OF WORKING UP HIGH MOLECULAR POLYVINYL CHLORIDE

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In the Patent Application S.N. 203 674 is described that mixtures of usual softeners, f.i. mixtures of tricresylphosphate and esters of high molecular fatty acids with univalent alcohols are well suited as softeners for high molecular polyvinyl chlorides manufactured according to the above named application.

There has been found by further working that mixtures of a special suitability are esters of polyhydric alcohols. Especially the esters of glycol—one hydroxyl group of which being etherified if necessary—or dihydroxy ethers with acids of at least 4 preferably 6 or more carbon atoms are taken in consideration for this purpose. E.g. butandiol, ethoxy butyl alcohol, diethylene glycole, triethylene glycole, ethylene glycole monomethyl ether and ethylene glycole monoethyl ether may be called as glycole components of the esters to be applied according to the invention; acid components may be f.i. caproic acid, diethyl acetic acid, ethyl caproic acid, phenoxy acetic acid, dimethyl phenoxy acetic acid, chlorine phenoxy acetic acid and diglycolic acid. If the esters of dihydroxy ethers are employed the effect of the component according to the invention is so intensive that the applying of usual softening agents as f.i. tricresylphosphate may be omitted.

These softening agents resp. combinations of softeners in polyvinyl chloride yield composition of matter with an excellent heat stability and a resistance to cold not obtained until now. E.g. the esters of butandiol with phenoxy acetic acid, chlorine phenoxy acetic acid or with dimethyl

phenoxy acetic acid yield—f.i. in combination with tricresylphosphate—heat stabilities of 245, 240 resp. 210 minutes measured according to the usual stability test which consists in heating the substance in a current of nitrogen at 170° C and in determining the time passed until the first splitting off of hydrogen chloride is shown by a solution of silver nitrate. Also by esters of not carbocyclic acids heat stabilities can be obtained lying far above those obtained until now. E.g. a stability of 130 minutes is obtained—even without an addition of tricresylphosphate—by applying the esters of diethylene glycole and of 2-ethyl caproic acid.

By the above described softening agents extraordinary resistances to cold can also be obtained. E.g. the substances of polyvinyl chloride produced with diglycolic acid esters are useful down to -40°C. But also with diethylene glycole esters of caproic acid a similar high resistance to cold can be caused.

This surprising increase of the resistance to heat and cold obtained by the softening agents according to the invention is combined with an excellent effect also on the mechanical properties, as e. g. on the resistance to pressure and tearing, bending strength, resistance to notching, resistance to abrasion. They also have a favorable influence upon the working up of the composition of matter.

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