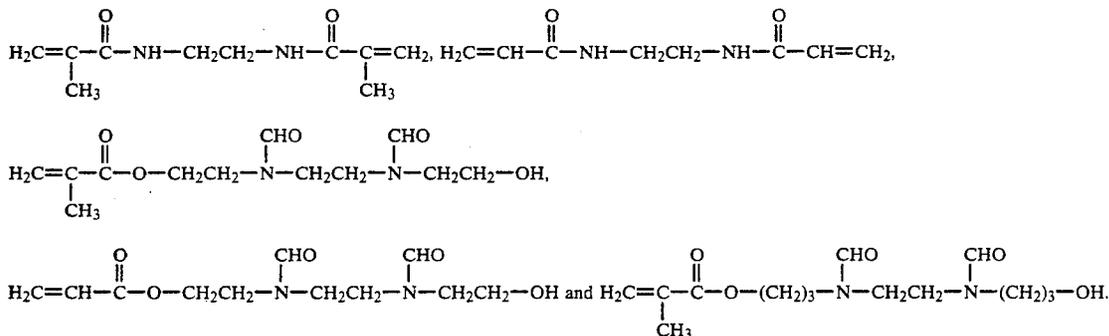


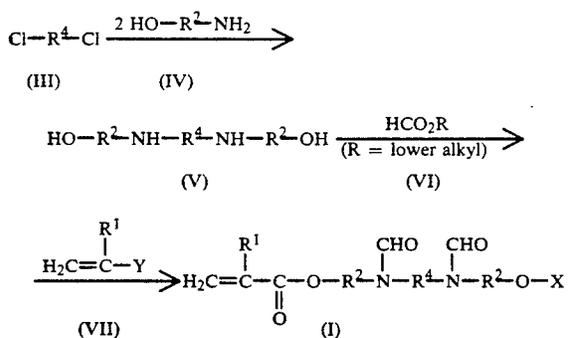
The alkanediyl-bis-carboxamides of the formulae:



are particularly preferred.

The use of mixtures of these compounds according to the invention, which also contain bifunctional compounds according to the invention as crosslinkers in addition to monofunctional (meth)acrylates or (meth)acrylamides, is particularly preferred.

The new alkanediyl-bis-carboxamides (I) according to the invention can be prepared from dichloroalkanes (III) and alkanolamines (IV). The N,N'-di(hydroxyalkyl)-alkylenediamines (V) first formed (DE 2,548,508) can be reacted to give the products (I) according to the invention by reaction with formic acid esters (VI) and esterification with one or two equivalents of (meth)acrylic acid, or its ester, anhydride or acid chloride (VII).



(R¹, R², R⁴ and X have the meanings described above, Y=OH, Oalkyl, Cl or O-CR¹=CH₂)

Initiators in the context of the present invention are free radical formers which induce a free radical polymerization. Photoinitiators, which induce a free radical polymerization under the action of light, for example UV light, visible light or laser light, are preferred.

The so-called photopolymerization initiators are known per se (Houben-Weyl, Methoden der organischen Chemie (Methods of Organic Chemistry), Volume E 20, page 80 et seq., Georg Thieme Verlag Stuttgart 1987). Preferably, these are mono- or dicarbonyl com-

pounds, such as benzoin and its derivatives, in particular benzoin methyl ether, benzil and benzil derivatives, for example 4,4-oxydibenzil and other dicarbonyl compounds such as diacetyl, 2,3-pentanedione and α-diketo derivatives of norbornane and substituted norbornanes, metal carbonyls such as manganese pentacarbonyl or quinones such as 9,10-phenanthrenequinone and naphthoquinone. Camphorquinone is particularly preferred.

The preparations according to the invention in general contain 0.01 to 2 parts by weight, preferably 0.1 to 0.5 part by weight of the initiator, relative to 100 part by weight of the carboxamide employed. If one of the parts to be joined which is in contact with the adhesive component according to the invention already contains an initiator of the type described, the initiator in the adhesive component can even be completely dispensed with.

The solvents in the context of the present invention should dissolve the component and, because of the application, should be non-toxic. Water and volatile organic solvents such as methanol, ethanol, propanol, isopropanol, acetone, methyl ethyl ketone, methyl acetate or ethyl acetate and tetrahydrofuran, may be mentioned as preferred.

In general, 10 to 1000 parts by weight, preferably 50 to 300 parts by weight, of the solvent are employed, relative to the alkanediyl-bis-carboxamide.

It may be advantageous to add coactivators, which accelerate the polymerization reaction, to the preparations according to the invention. Known accelerators are, for example, amines such as p-toluidine, dimethyl-p-toluidine, trialkylamines such as trihexylamine, polyamines such as N,N,N',N'-tetra-alkylalkylenediamine, barbituric acid and dialkylbarbituric acid.

The coactivators are in general employed in an amount from 0.02 to 4 % by weight, preferably 0.2 to 1 % by weight, relative to the amount of polymerizable compounds.

The compositions according to the invention may contain carbonyl compounds as a further component.

Carbonyl compounds in the context of the present invention are aldehydes and ketones which contain 1 to