

The change in dimensions, determined in accordance with ISO 4823 (dry storage, 23° C.), is: 30 minutes 0.1%

- 60 minutes 0.2%
- 120 minutes 0.3 %
- 12 hours 1.0%
- 24 hours 1.1

EXAMPLE 1

- a) The procedure is as described in Comparison Example 1, Stage a), except that 221.8 g (0.5 mol) of 3-aminopropyl-tris(2-methoxyethoxyethoxy) silane are added dropwise as the aminosilane compound. The resulting poly(ether-urethane-urea) likewise has good flow properties and is clear and slightly yellowish-coloured.
- b) 20 g of prepolymer from Stage b) are stirred with 0.6 g of the hardener liquid described under Comparison Example 1, Stage b) on a mixing block for 30 seconds. The composition cures completely within a few minutes to give a rubbery-elastic, non-tacky body.

The change in dimensions (dry storage, 23° C., ISO 4823) is:

- 30 minutes 0%
- 60 minutes 0%
- 120 minutes 0%
- 12 hours 0.5%
- 24 hours 1.1%

EXAMPLE 2

- a) 89.65 g (0.5 mol) of 3-aminopropyltrimethoxysilane and 525 g (1.5 mol) of polyethylene glycol monomethyl ether (molecular weight 350) are initially stirred with 0.1 g of sodium at 80° C. for 3 hours until the sodium has dissolved. The mixture is then heated to 150° C. and the methanol formed from the transesterification reaction is distilled off and collected. After 12 hours, the mixture is cooled to 70° C. and an oil pump vacuum (2 hPa) is applied for 5 hours. The mixture is then cooled in a stream of nitrogen.
- b) 582.65 g of the transesterification product obtained above in Stage a) are added dropwise to the prepolymer obtained in Comparison Example 1 of Stage a) from 912.5 g of linear polyether-diol and 111 g of isophorone diisocyanate. Isocyanate groups can then no longer be detected by infrared spectroscopy.
- c) A hardener paste comprising 33% by weight of phosphoric acid, 17% by weight of water (doubly distilled) and 50% by weight of glycerol is then mixed. 20 g of the substance from Stage b) and 0.93 g of the hardener paste are mixed on a mixing block for 30 seconds. The composition cures completely within a few minutes to give a rubbery-elastic, non-tacky solid.

The physical properties were determined in accordance with ISO 4823. The change in dimensions is:

- after 30 minutes: 0.0%
- after 60 minutes: 0.0%
- after 2 hours: 0.0%
- after 5 hours: 0.17% after 24 hours: 0.8%

EXAMPLE 3

- a) 44.82 g (0.25 mol) of 3-aminopropyltrimethoxysilane and 525 g (0.75 mol) of polypropylene glycol monobutyl ether (molecular weight=700) are initially stirred with 0.1 g of sodium at 80° C. for 3 hours until the sodium has dissolved. The mixture is then heated to 150° C. and the

methanol formed from the transesterification reaction is distilled off and collected. After 12 hours, the mixture is cooled to 70° C. and an oil pump vacuum (2 mbar) is applied for 5 hours. The mixture is then cooled in a stream of nitrogen.

- b) The procedure is as described in Comparison Example 1. However, 500 g (0.25 mol of OH) of polypropylene glycol (molecular weight 4000), as the linear polyetherdiol, and correspondingly 55.57 g (0.25 mol) of isophorone diisocyanate are employed. 553.75 g of the transesterification product from Stage a) are added dropwise as the aminosilane reaction partner in the course of 2 hours. Isocyanate groups can then no longer be detected by infrared spectroscopy.

- c) A hardener paste comprising 42.5% by weight of phosphoric acid, 7.5% by weight of water (double-distilled) and 50% by weight of glycerol is mixed.

20 g of the substance from Stage b) and 1.63 g of the hardener paste are mixed on a mixing block for 30 seconds. The composition cures completely within a few minutes to give a rubbery-elastic, non-tacky solid.

The change in dimensions, determined in accordance with ISO 4823, dry storage, 23° C., is:

after 30 minutes:	0.0 %
after 60 minutes:	0.0 %
after 2 hours:	0.2 %
after 5 hours:	0.2 %
after 24 hours:	0.4%.

EXAMPLE 4

- a) Transesterification

17.93 g (0.1 mol) of 3-aminopropyltrimethoxysilane and 123.77 g. (0.6 mol) of tripropylene glycol monomethyl ether are initially stirred with 0.1 g of sodium at 60° C. with exclusion of moisture for 2 hours. After the sodium has dissolved, the temperature is increased to 150° C. in the course of 4 hours and the methanol formed during the transesterification reaction is distilled off and collected. After 12 hours, an oil pump vacuum is applied at this temperature for 5 hours. 55.76 g (0.27 mol) of excess tripropylene glycol monomethyl ether thereby distill off.

$n=1.4295$ (literature: 1.4300)

Determination of the amine content of the transesterification product remaining in the distillation sump shows that quantitative replacement of the methoxy groups has taken place.

Amine content: calculated: 2.26% found: 2.28%
(3-aminopropyl-tris (2-methoxytriopropoxy)silane

- b) Preparation of the prepolymer

The procedure is as described in Comparison Example 1. However, 40 g (8 mmol) of polypropylene glycol (molecular weight 4000), as the linear polyether-diol, and correspondingly 3.56 g (16 mmol) of isophorone diisocyanate are employed. 11.23 g (16 mmol) of the transesterification product from Example 9 are added dropwise as the aminosilane reaction partner. After the mixture has been stirred at room temperature for 4 hours, isocyanate can no longer be detected by infrared spectroscopy.

We claim:

1. A plastic for use in making an impression, duplicate or model and having a low tendency to shrink after complete curing, the plastic having at least one predominantly linear polyaddition product comprising silane and aliphatically or cycloaliphatically bound ether, urethane and urea groups and a number average molecular weight of from 800 to 20,000, wherein the polyaddition product has: