PROCESS FOR THE PREPARATION OF 4,4′-DIPHENYLMETHANE DIISOCYANATE

ABSTRACT OF THE DISCLOSURE

4,4′-diphenylmethane diisocyanate is produced at two different sites by

a) reacting aniline and formaldehyde in the presence of an acid catalyst to produce a mixture of diamines and polyamines of the diphenylmethane series at a first production site,

b) these diamines and polyamines are then reacted with phosgene to give the corresponding diisocyanates and polyisocyanates of the diphenylmethane series, which may optionally be separated by distillation to give a mixture of diisocyanates and polyisocyanates containing from 50 to 80 wt.% of 4,4′-diphenylmethane diisocyanate, from 1 to 12 wt.% of 2,4′- and/or 2,2′-diphenylmethane diisocyanate taken together, and from 10 to 45 wt.% of trifunctional and higher-functional polyisocyanates, based on the weight of the mixture of diisocyanates and polyisocyanates,

c) transferring the mixture of diisocyanates and polyisocyanates to transport containers and transporting these isocyanate-containing containers to a second production site remote from the first, and

d) separating the mixture of diisocyanates and polyisocyanates by distillation and/or crystallization to give a pure 4,4′-diphenylmethane diisocyanate containing at least 97 wt.% of 4,4′-diphenylmethane diisocyanate and a maximum of 3 wt.% of 2,4′-diphenylmethane diisocyanate.