Abstract: The present invention is directed to polyisocyanate addition compounds which i) are substantially free from isocyanate groups and are prepared from one or more a) polyisocyanate adducts containing uretdione, biuret, allophanate, carbodiimide and/or oxadiazetrideine groups and/or b) NCO prepolymers, ii) contain urethane groups, iii) contain fluorine (calculated as F1 AW 19) in an amount of 0.01 to 50% by weight, and iv) contain ethylenically unsaturated groups (calculated as CO=C, MW 24) in an amount of 2 to 40% by weight, wherein the preceding percentages are based on the solids content of the polyisocyanate addition compounds and wherein fluorine is incorporated by reacting an isocyanate group with a compound containing two or more carbon atoms, one or more hydroxyl groups and one or more fluorine atoms to form urethane groups and optionally allophanate groups, provided that more than 50 mole % of the groups that chemically incorporate fluorine into the polyisocyanate addition compounds are urethane groups. The present invention also relates to the use of the polyisocyanate addition compounds in coating compositions curable by free radical polymerization.