Claims

1. Use of an adduct of a polyetheramine and an epoxy-containing compound as an agent for reducing drying shrinkage and/or for reducing drying cracking in a mineral binder composition.

2. Use according to claim 1 wherein the polyetheramine comprises or consists of an amine terminated poly(alkylene oxide), especially an amine terminated poly(propylene oxide), in particular a poly(propylene oxide) diamine.

3. Use according to any of claims 1 – 2, wherein a molecular weight M_w of the polyetheramine is from 100 – 10'000 g/mol, especially from 150 – 7'000 g/mol, in particular 200 – 5'000 g/mol.

4. Use according to any of claims 1 – 3, whereby the epoxy-containing substance comprises or consists of a glycidyl ether, especially an alkyl glycidyl ether.

5. Use according to any of claims 1 – 4, whereby the epoxy-containing substance comprises or consists of a diglycidyl ether and/or a triglycidyl ether, especially a diglycidyl ether of an aliphatic diol and/or a triglycidyl ether of an aliphatic triol.

6. Use according to any of claims 1 – 5, wherein a molecular weight of the epoxy-containing compound is from 50 – 2'000 g/mol, especially from 75 – 1'000 g/mol, in particular 100 – 500 g/mol, for example 120 – 300 g/mol.

7. Use according to any of claims 1 – 6, whereby the polyetheramine comprises or consists of a poly(propylene oxide) diamine and the epoxy-containing substance comprises or consists of a diglycidyl ether of an aliphatic diol, especially neopentyl glycol diglycidyl ether.

8. Use according to any of claims 1 – 7, wherein in the adduct, an amine group of the polyetheramine and an epoxide group of the epoxy-containing substance are connected in the form of an amino alcohol group, especially a β-amino alcohol group.

9. Use according to any of claim 1 – 8, wherein in the adduct, a molar proportion of the polyetheramine to the epoxy-containing substance is (1.5 – 2.5):1, in particular (1.8 – 2.3):1, especially (1.9 – 2.1):1 or 2:1.

10. Use according to any of claims 1 – 9, wherein the adduct is a part of a composition comprising free or unreacted polyetheramine.

11. Method for producing an agent for reducing drying shrinkage and/or for reducing drying cracking whereby the method comprises the step of forming an adduct by reacting a polyetheramine and an epoxy-containing substance, especially wherein an amine group of the polyetheramine is alkoxylated with an epoxide group of the epoxy-containing substance, whereby the polyetheramine comprises or consists of a poly(propylene oxide) diamine and the epoxy-containing substance comprises or consists of a diglycidyl ether of an aliphatic diol, especially neopentyl glycol diglycidyl ether.

12. Method according to claim 11, wherein a molar proportion of the polyetheramine to the epoxy-containing substance is from 2:1 to 15:1, especially, 5:1 – 12:1, in particular 7:1 – 9:1.

13. Agent for reducing drying shrinkage and/or for reducing drying cracking in mineral binder compositions, comprising an adduct of a polyetheramine and an epoxy-containing substance as described in any of claims 1 – 6 and 8 -10, wherein the polyetheramine comprises or consists of a poly(propylene oxide) diamine and the epoxy-containing substance comprises or consists of a diglycidyl ether of an aliphatic diol, especially neopentyl glycol diglycidyl ether, or comprising an agent which is obtainable or obtained by a method according to any of claim 11 – 12.

14. Agent according to claim 13, additionally comprising free or unreacted polyetheramine, wherein, in particular, a molar proportion of free or unreacted polyetheramine to the adduct is from 2:1 – 15:1, especially 3:1 – 10:1, in particular 4:1 – 9:1, for example 5:1 – 8:1.

15. Composition, in particular a mortar or concrete composition, comprising a mineral binder and an agent for reducing drying shrinkage and/or for reducing drying cracking in mineral binder compositions as described in any of claims 1 – 10 or 13 – 14.

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