

Title (en)  
BUILDER FOR DETERGENTS.

Title (de)  
GERÜSTSTOFF FÜR WASCHMITTEL.

Title (fr)  
ADJUVANTS POUR AGENTS DE LAVAGE.

Publication  
**EP 0656051 A1 19950607 (DE)**

Application  
**EP 93919062 A 19930816**

Priority  
• DE 4228044 A 19920824  
• EP 9302171 W 19930816

Abstract (en)  
[origin: WO9404650A1] Washing and cleaning agents, especially for textiles, which contain combinations of builders like zeolithe and/or crystalline laminated silicates of the general formula (I)  $\text{NaMSi}_x\text{O}_{2x+1}\cdot y\text{H}_2\text{O}$ , in which M is sodium or hydrogen, x is a number from 1.9 to 4 and y is a number from 0 to 20, and, as complex formers, polyhydroxy bicarboxylic acids or polyhydroxy bicarboxylic acid salts with 4 to 6 carbon atoms and at least 2 hydroxy groups per molecule or mixtures of these acids and/or salts, in which the ratio by weight of builders to polyhydroxy dicarboxylic acids or polyhydroxy dicarboxylic acid salts or mixtures of these acids and/or salts is 30:1 to 1:1, exhibit better secondary washing capacity than similar agents which, instead of polyhydroxy dicarboxylic acids or polyhydroxy dicarboxylic acid salts, contain polyhydroxy tricarboxylic acids or polyhydroxy tricarboxylic acid salts like citric acid or citrate. Preferred agents contain up to 15 wt % sodium and/or potassium carbonate but no phosphonates, (co)polymeric polycarboxylates and citric acid or citrate.

IPC 1-7  
**C11D 3/22**; **C11D 3/12**; **C11D 11/02**

IPC 8 full level  
**C11D 3/08** (2006.01); **C11D 3/12** (2006.01); **C11D 3/20** (2006.01); **C11D 3/22** (2006.01); **C11D 11/02** (2006.01)

CPC (source: EP)  
**C11D 3/1273** (2013.01); **C11D 3/128** (2013.01); **C11D 3/2086** (2013.01); **C11D 11/02** (2013.01)

Citation (search report)  
See references of WO 9404650A1

Cited by  
US7728170B2

Designated contracting state (EPC)  
AT BE CH DE ES FR IT LI NL

DOCDB simple family (publication)  
**WO 9404650 A1 19940303**; AT E136327 T1 19960415; DE 4228044 A1 19940303; DE 59302126 D1 19960509; EP 0656051 A1 19950607; EP 0656051 B1 19960403; EP 0656051 B2 19981223; ES 2086236 T3 19960616; ES 2086236 T5 19990301; JP H08500373 A 19960116; PL 307588 A1 19950529

DOCDB simple family (application)  
**EP 9302171 W 19930816**; AT 93919062 T 19930816; DE 4228044 A 19920824; DE 59302126 T 19930816; EP 93919062 A 19930816; ES 93919062 T 19930816; JP 50183894 A 19930816; PL 30758893 A 19930816