

Title (en)  
PRE-WASH COMPOSITIONS CONTAINING ENZYMES

Publication  
**EP 0177183 B1 19891129 (EN)**

Application  
**EP 85306215 A 19850902**

Priority  
US 65061784 A 19840912

Abstract (en)  
[origin: EP0177183A1] Compositions effective in removing protein, fat and/or starch based stains as well as oil and grease based stains from fabrics comprise organic solvents admixed with surfactants and an enzyme component wherein the enzymes are dissolved in aqueous solution and the aqueous solution is, in turn, dispersed as reversed micelles within the solvent surfactant mixture. Encapsulating the enzymes in reversed micelles protects them from degradation by the solvents and thereby prolongs the effectiveness of the enzymes for extended periods of time. The total water content of the compositions is kept below 5 weight% so that the compositions' oil and grease stain removal ability remains unimpaired.

IPC 1-7  
**C11D 3/386**

IPC 8 full level  
**C11D 3/386** (2006.01)

CPC (source: EP)  
**C11D 3/38618** (2013.01); **C11D 3/38663** (2013.01)

Cited by  
EP0351162A1; EP0238216A1; EP0462460A3; US5460658A; US4919834A; AU630880B2; US6172031B1; US5223166A; EP0481542A3; US4874537A; US10065332B2; WO9633257A1; WO9000593A1; WO9425560A1

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**EP 0177183 A1 19860409; EP 0177183 B1 19891129**; AT E48285 T1 19891215; AU 4710385 A 19860320; AU 577148 B2 19880915; CA 1263944 A 19891219; DE 3574483 D1 19900104; ES 547587 A0 19861001; ES 8700312 A1 19861001; JP S6172100 A 19860414; MX 162714 A 19910617; TR 24582 A 19911127

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**EP 85306215 A 19850902**; AT 85306215 T 19850902; AU 4710385 A 19850905; CA 489369 A 19850823; DE 3574483 T 19850902; ES 547587 A 19850912; JP 20071785 A 19850912; MX 20660085 A 19850912; TR 3785185 A 19850912