

Title (en)  
LIPASE AND CUTINASE SURFACTANT SYSTEMS AND METHOD USEFUL IN LAUNDERING

Publication  
**EP 0399681 A3 19910116 (EN)**

Application  
**EP 90304796 A 19900502**

Priority  
US 35178189 A 19890515

Abstract (en)  
[origin: EP0399681A2] The activation of glycerol ester hydrolases, toward triglyceride oils, is correlated to the molar ratio of total triglyceride to surfactant concentrations in the test solution. This ratio dependency, when considered in laundry compositions, allows for predictable and improved utilization of these enzymes in the hydrolysis of triglyceride stains. A particularly preferred enzyme for this use is isolatable from *Pseudomonas putida* ATCC 53552. This enzyme, or hydrolase, has sufficient hydrolysis activity in a laundering solution to hydrolyze at least about 5 wt. % of total triglyceride stains in a laundering solution within about 15 minutes at about 25 DEG C.

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**C11D 3/386**

IPC 8 full level  
**C12N 9/20** (2006.01); **C11D 3/386** (2006.01); **D06L 1/00** (2006.01); **C12R 1/40** (2006.01)

CPC (source: EP)  
**C11D 3/38627** (2013.01); **C11D 3/38636** (2013.01)

Citation (search report)  
• [AD] US 3950277 A 19760413 - STEWART ROBERT LEE, et al  
• [AP] EP 0341999 A1 19891115 - UNILEVER PLC [GB], et al  
• [AD] US 4707291 A 19871117 - THOM DAVID [NL], et al

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Designated contracting state (EPC)  
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

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