

Title (en)  
MANUFACTURE OF COMPACTED GRANULES FOR WASHING AGENTS.

Title (de)  
HERSTELLUNG VERDICHTETER GRANULATE FÜR WASCHMITTEL.

Title (fr)  
FABRICATION DE GRANULES COMPRIMES POUR PRODUITS DE LAVAGE.

Publication  
**EP 0486592 B1 19940615**

Application  
**EP 90912777 A 19900731**

Priority  
• DE 3926253 A 19890809  
• DE 4010533 A 19900402  
• EP 9001247 W 19900731

Abstract (en)  
[origin: WO9102047A1] Compacted granules of given particle size are obtained from preliminary mixtures of at least partly solid constituents of washing and cleaning agents by addition of water-soluble, water-dispersible or water-emulsifiable plasticizers and/or lubricants. The preliminary mixture is worked into a homogeneous mass and extruded at pressures of 25 to 200 bar through perforated moulds with apertures whose width is equal to the given granule size. The compacted extrudates are reduced to the given granule size. The process is suitable for manufacturing concentrates for domestic and industrial washing and cleaning agents in the form of bulk and pourable highly compacted granules. The concentrates possess a long storage life and show no tendency to agglomerate.

IPC 1-7  
**C11D 17/06**; **C11D 11/00**

IPC 8 full level  
**C11D 11/00** (2006.01); **C11D 17/00** (2006.01); **C11D 17/06** (2006.01)

CPC (source: EP US)  
**C11D 11/0082** (2013.01 - EP US); **C11D 17/0047** (2013.01 - EP US); **C11D 17/0073** (2013.01 - EP US); **C11D 17/065** (2013.01 - EP US)

Cited by  
US6153576A; US6075001A; US6313081B1; US6875734B2; DE102007016391A1; WO9638530A1; US6797687B2; US6881359B2; US6897193B2; US7087570B2; US6616705B2; US6211136B1; US7510859B2; DE102007028310A1; WO2007054203A2; US6620209B2; US6746996B2; DE102011010818A1; WO2012107187A1; US7186678B2; US6534471B1; US8263541B2; US8785362B2; US6409770B1; US8080401B2; DE102014009836A1; DE102004047777B4; DE102008013606A1; US6479452B2; US7049279B1; US6200946B1; US8426635B2; US6391838B1; US6380147B1; US7888104B2; DE102015002877A1; US7098178B2; US6977239B1; US6235695B1; US8785365B2; US9353361B2; DE102004047776B4; US6897192B2; US6541233B1; US6417152B1; US6756351B2; US6610752B1; US6191096B1; US6458755B2; US7300782B2; US7122511B2; US6649085B2; US7199096B1; US6703357B1; US6417151B1; US6187055B1

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

DOCDB simple family (publication)  
**WO 9102047 A1 19910221**; AT E107352 T1 19940715; DE 59006160 D1 19940721; DK 0486592 T3 19940718; EP 0486592 A1 19920527; EP 0486592 B1 19940615; ES 2055441 T3 19940816; JP H05500076 A 19930114; KR 927003783 A 19921218; US 5318733 A 19940607

DOCDB simple family (application)  
**EP 9001247 W 19900731**; AT 90912777 T 19900731; DE 59006160 T 19900731; DK 90912777 T 19900731; EP 90912777 A 19900731; ES 90912777 T 19900731; JP 51211990 A 19900731; KR 920700279 A 19920208; US 83425192 A 19920409