

Title (en)
PRESSURIZED HIGH TEMPERATURE POLYMERIZATION PROCESS

Title (de)
HOCHDRUCK-HOCHTEMPERATUR-POLYMERISATIONSVERFAHREN

Title (fr)
PROCESSUS DE POLYMERISATION HAUTE TEMPERATURE SOUS PRESSION

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Application
EP 04777656 A 20040701

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• US 2004021684 W 20040701
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Abstract (en)
[origin: WO2005003185A1] The present invention is directed to a novel high temperature polymerization process operating at high pressures for producing a polymer. The process includes conveying hybrid reactor mixtures, which include one or more hybrid reactor monomers and one or more hybrid reactor initiators to one or more hybrid reactors. The hybrid reactors are maintained at effective hybrid polymerization temperatures and sub-reflux polymerization gage pressures to cause polymerization of a portion of the hybrid reactor monomers into the polymer. The process further includes conveying hybrid reactor contents from the hybrid reactors to one or more batch reactors maintained at effective batch polymerization temperatures and reflux polymerization pressures to cause polymerization of a remaining portion of the hybrid reactor monomers into the polymer. The hybrid reactors are smaller in volume than the batch reactors. By utilizing the hybrid/batch reactor combination, the process of the present invention can be operated under safe working conditions. The process of the present invention also allows control of the polydispersity and molecular weight of the resulting polymers. As a result, the polymers made therefrom can be used as binders in compositions, such as coating compositions used in the automotive refinish and OEM applications having desired coating properties. The present invention is also directed to a polymerization system used in the process of the present invention.

IPC 8 full level
C08F 2/00 (2006.01); **B32B 27/04** (2006.01); **C08F 2/26** (2006.01); **C08F 8/30** (2006.01); **C08G 18/62** (2006.01); **C08L 33/14** (2006.01); **C09D 133/08** (2006.01); **C09D 133/14** (2006.01); **C08L 67/00** (2006.01)

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Citation (search report)
• [PX] WO 2004007627 A2 20040122 - DU PONT [US], et al
• [XY] US 4480078 A 19841030 - GUJARATHI RAMESH N [US]
• [XY] US 4559374 A 19851217 - SENYEK MICHAEL L [US], et al
• [Y] GB 1350874 A 19740424 - MARUZEN OIL CO LTD, et al
• [Y] US 5264315 A 19931123 - TAN HOCK S [CA], et al
• [Y] EP 0234672 A2 19870902 - MITSUI TOATSU CHEMICALS [JP]
• See references of WO 2005003185A1

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