

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 May 2009 (14.05.2009)

PCT

(10) International Publication Number
WO 2009/061601 A3

(51) International Patent Classification:
C08F 2/00 (2006.01) *C08F 10/00* (2006.01)
C08F 2/34 (2006.01)

(21) International Application Number:
PCT/US2008/080323

(22) International Filing Date: 17 October 2008 (17.10.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/936,604 7 November 2007 (07.11.2007) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
2 July 2009

(54) Title: GAS PHASE POLYMERIZATION AND DISBRIBUTOR PLATE PASSIVATION TREATMENT

(57) Abstract: Apparatus and methods for gas phase polymerization are provided. The method can include polymerizing one or more olefins at gas phase conditions in a reactor comprising one or more process exposed surfaces in the presence of a catalyst system; and treating at least a portion of the one or more process exposed surfaces prior to injecting the catalyst system to reduce the number of surface hydroxyls or access of the catalyst system to the surface hydroxyls on the process exposed surfaces.



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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/080323

A. CLASSIFICATION OF SUBJECT MATTER

INV. C08F2/00 C08F2/34 C08F10/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C08F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 942 009 A (UNION CARBIDE CHEM PLASTIC [US]) 15 September 1999 (1999-09-15) paragraphs [0001], [0007], [0008], [0023], [0025], [0026]	1-20
P,X	WO 2008/108931 A (UNIVATION TECH LLC [US]; HAGERTY ROBERT O [US]; STAVENS KEVIN B. [US];) 12 September 2008 (2008-09-12) paragraphs [0010], [0001] - [0034], [0038], [0040], [0041], [0050], [0053], [0073], [0079], [0097], [0104], [0109], [0126] - [0133]	1,2,5-9, 11,12, 17-20

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

8 January 2009

Date of mailing of the international search report

19/05/2009

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/080323

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-20

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-20

method for gas phase polymerisation with reduced fouling in which process exposed surfaces are treated to lower the number of surface hydroxyls and then one or more olefins are polymerised in the presence of a catalyst system, comprising preferably a chromocene, to provide a protecting coating

2. claims: 21-23

distributor plate with a difined structure treated with a passivation layer

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/080323

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0942009	A	15-09-1999	AU 1320699 A	23-09-1999
			BR 9900312 A	21-03-2000
			CA 2265168 A1	11-09-1999
			JP 11315103 A	16-11-1999
W0 2008108931	A	12-09-2008	NONE	