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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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(54) Title: CATALYST FOR THE DEHYDROGENATION OF ETHYL BENZENE TO STYRENE PREPARED WITH A HIGH PURITY IRON PRECURSOR

(57) Abstract: A method for producing a catalyst for use in the dehydrogenation of ethylbenzene to styrene is disclosed. The catalyst of the present invention comprises a high purity metal and at least one promoter in the form of solid oxides, oxide hydrates, hydroxides, hydroxycarbonates or metals. The catalyst is prepared via a method which comprises the preparation of at least one high purity iron precursor with or without an additional support material and which uses a nominal amount of water in the catalyst production. The catalyst pellets prepared with the high purity metal precursor are essentially free of sulfur and chloride contaminants.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/22096

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **B01J 23/00**(2006.01),**23/40**(2006.01),**23/42**(2006.01),**23/44**(2006.01),**23/56**(2006.01),**23/58**(2006.01),**23/60**(2006.01),**23/70**(2006.01),**23/72**(2006.01),**23/74**(2006.01),**31/00**(2006.01),**37/00**(2006.01),**21/08**(2006.01),**21/12**(2006.01),**21/14**(2006.01)

USPC: Please See Continuation Sheet

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)

U.S. : Please See Continuation Sheet

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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,242,379 B1 (WILLIAMS et al) 05 June 2001 (05.06.2001), see entire document.	1-12
Y	US 5,935,898 A (TRUBENBACH et al) 10 August 1999 (10.08.1999), see entire document.	1-12
A	US 5,962,757 A (MILAM et al) 05 October 1999 (05.10.1999), see entire document.	1-12
Y	US 3,518,208 A (SCHNEIDER et al) 30 June 1970 (30.06.1970), see entire document.	1-12
Y	US 4,933,313 A (TAMARU et al) 12 June 1990 (12.06.1990), see entire document.	1-12
Y	US 4,478,954 A (CONNOLLY et al) 23 October 1984 (23.10.1984), see entire document.	1-12
A	US 4,343,724 A (ANTOS) 10 August 1982 (10.08.1982), see entire document.	1-12



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	"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
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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INTERNATIONAL SEARCH REPORTInternational application No.
PCT/US05/22096**C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,499,204 A (VANDERSPURT et al) 12 February 1985 (12.02.1985), see entire document.	1-12
A	US 6,183,658 B1 (LESNIAK et al) 06 February 2001 (06.02.2001), see entire document.	1-12

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Continuation of B. FIELDS SEARCHED Item 1:

502/304, 306, 307, 309, 312, 314, 316, 317, 318, 319, 320, 321, 322, 323, 326, 327, 328, 329, 330, 331, 332, 333, 334, 336, 338, 339

Continuation of USPC:

502/304,306,307,309,312,314,316,317,318,319,320,321,322,323,326,327,328,329,330,331,332,333,334,336,338,339