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(54) Title: METHOD FOR INHIBITING CORROSION USING PHOSPHOROUS ACID

(57) Abstract: The present invention relates to a method for inhibiting high temperature of corrosion-prone metal surfaces by organic acid-containing petroleum streams by providing an effective corrosion-inhibiting amount of phosphorous acid, typically up to 1000 wppm, to the metal surface.



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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/19684

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C10G75/02

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)

IPC 7 C10G

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, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 018 701 A (RALSTON PAUL HOTCHKISS ET AL) 19 April 1977 (1977-04-19) column 1, line 13 - line 21; claim 1; table 1 ---	1,3,4,6
X	US 3 531 394 A (KOSZMAN IHOR) 29 September 1970 (1970-09-29) column 2, line 59 -column 4, line 7; claim 1 ---	7
A	---	1-7
A	US 5 630 964 A (BABAIAK-KIBALA ELIZABETH ET AL) 20 May 1997 (1997-05-20) cited in the application claim 1 ---	1-7
A	US 4 344 861 A (LEVY JOSEPH) 17 August 1982 (1982-08-17) claim 1 ---	1-7
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>AT 109 977 B (THOMAS WATTS COSLETT)  25 June 1928 (1928-06-25)  claim 1  -----</p>	1-7

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 02/19684

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4018701	A	19-04-1977	NONE	
US 3531394	A	29-09-1970	NL 7008717 A ,C GB 1307542 A	17-12-1971 21-02-1973
US 5630964	A	20-05-1997	BR 9602187 A CA 2176182 A1 DE 69622319 D1 DE 69622319 T2 EP 0742277 A2 ES 2179916 T3 JP 8311671 A SG 50719 A1	13-10-1999 11-11-1996 22-08-2002 20-02-2003 13-11-1996 01-02-2003 26-11-1996 20-07-1998
US 4344861	A	17-08-1982	NONE	
AT 109977	B	25-06-1928	DK 37110 C FR 610316 A US 1610362 A	07-02-1927 03-09-1926 14-12-1926