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(54) Title: WATER DISPERSIBLE SILANES AS CORROSION-PROTECTION COATINGS AND PAINT PRIMERS FOR METAL PRETREATMENT

(57) Abstract: A method of applying to a metal surface a composition and drying the surface for crosslinking, which composition comprises a dispersion in the solvent of a compound comprising the reaction product of (1) a polyamine in which a plurality of amine groups are bonded to at least one τadical comprising alkylene or arylene groups that separate the polyamine nitrogen atoms by at least four intermediate atoms in a chain, and (2) a silane which carries a plurality of silicon-bonded hydrolysable groups, and a silicon-bonded organic group that is covalently reactive with and which bonds with an amine group, to provide a reaction product molecule which comprises an average of at least about 2.5 of said silane groups per molecule. Some of these materials show superior advantage as a paint primer and some provide excellent corrosion resistance.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 07/01161

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - B05D 3/02; B32B 19/00 (2007.01)
USPC - 427/372.2; 428/405
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)
USPC: 427/372.2; 428/405

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 427/2.1,372.2,409,410; 428/391,405,447 (text search)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST (PGPB,USPT,USOC,EPAB,JPAB);DialogPro (General Research); Google Scholar
Paint, primer, coat, dry, metal, hydrocarbon, ether, silicon, silane, siloxane, alkylene, arylene, radical, ring, epoxide, aluminum, titanium, zinc, methoxy, ethoxy, glycidoxypropyl, polyamine, polyether, diamine, glycidoxypropylmethoxysilane

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ------ Y	US 6,867,318 B1 (CUI) 15 March 2005 (15.03.2005), abstract, col 1, ln 1-62, col 2, ln 1-22, col 2, ln 45-55, col 3, ln 1-15, col 3, ln 35 - col 4, ln 67, col 5, ln 30 - col 6, ln 63, col 8, ln 30-40, col 9, ln 44-48 and col 10, ln 55 - col 11, ln 9	1, 6-10, 22-28, 31 ---------- 2-5, 11-21, 29, 30, 32-35
Y	US 4,140,830 A (WILLIAMS et al.) 20 February 1979 (20.02.1979), col 2, ln 51-54, col 3, ln 1-20, col 3, ln 38-66, col 4, ln 15-68, col 5, ln 39-60, col 5, ln 61-68 and col 14, ln 31-55	2-5, 11-21, 29, 30, 32-35
Y	US 6,900,260 B1 (MANGELS et al.) 31 May 2005 (31.05.2005), abstract, col 1, ln 8-35, col 7, ln 35-39, col 7, ln 62 - col 8, ln 49, col 9, ln 32-63 and col 17, ln 9-25	4, 17- 21, 30, 33-35
A	US 5,118,724 A (FRANCES et al.) 02 June 1992 (02.06.1992), abstract, col 1, ln 41-68 - col 2, ln 60, col 3, ln 25-47 and col 4, ln 27-42	1, 2, 4, 11, 12
A	US 2006/0009592 A1 (OCHS et al.) 12 January 2006 (12.01.2006), para [0045])	3
A	US 4,544,582 A (BENJAMIN) 01 October 1985 (01.10.1985), entire document	1-35

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

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"A" document defining the general state of the art which is not considered to be of particular relevance
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"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
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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