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27 November 2008

(54) Title: MEHTOD FOR INHIBITING FOULING IN BASIC WASHING SYSTEMS

(57) Abstract: Fouling in basic washing systems such as caustic scrubbers can be prevented or at least mitigated by treating the liquid washing phase used in a caustic scrubber with an additive having at least one compound selected from the group consisting of oxalyl dihydrazide, a disulfite salt, isopropyl hydroxylamine, chlorobenzhydrazide, aminobenzhydrazide, a thiosulfate salt, 4,4-dimethyl oxazolidine, a hydrosulfite salt, and mixtures thereof.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/059328

A. CLASSIFICATION OF SUBJECT MATTER
INV. B01D53/50 C10G9/16

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)
B01D 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)

EP0-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.
X	US 5 288 394 A (LEWIS VINCENT E [US] ET AL) 22 February 1994 (1994-02-22) column 2, line 36 - line 60 column 3, line 1 - line 57 claims -----	1-10
A	US 5 160 425 A (LEWIS VINCENT E [US]) 3 November 1992 (1992-11-03) column 2, line 54 - column 3, line 47; claims -----	1-10
Y	WO 96/37279 A (BAKER HUGHES INC [US]) 28 November 1996 (1996-11-28) page 3, line 13 - page 4, line 6; claims -----	1-10
Y	US 5 527 447 A (ROOF GLENN L [US]) 18 June 1996 (1996-06-18) claims -----	1-10
	-/-	



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

'&' document member of the same patent family

Date of the actual completion of the international search

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Date of mailing of the international search report

01/10/2008

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/059328

C(Continuation of). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication where appropriate, of the relevant passages	Relevant to claim No
A	EP 0 824 142 A (NALCO EXXON ENERGY CHEM LP [US]) 18 February 1998 (1998-02-18) page 2, line 45 - page 3, line 10; examples 2,5 -----	1-10
A	WO 92/13929 A (ASHCHEM I P INC [US]) 20 August 1992 (1992-08-20) claims -----	1-10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/059328

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 fee, 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 report covers 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 (part) - 10 (part)

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: Kpart)-l0(part)

A method for the prevention or mitigation of fouling in basic washing systems comprising treating a liquid washing phase used in the washing system with a hydrazide additive selected from oxalyl dihydrazide, chlorobenzhydrazide, aminobenzhydrazide and mixtures thereof.
Also the composition comprising said additive.

2. claims: Kpart)-l0(part)

A method for the prevention or mitigation of fouling in basic washing systems comprising treating a liquid washing phase used in the washing system with a thio-salt additive selected from a disulfite salt, a thiosulfate salt, a hydrosulfite salt and mixtures thereof.
Also the composition comprising said additive.

3. claims: Kpart)-l0(part)

A method for the prevention or mitigation of fouling in basic washing systems comprising treating a liquid washing phase used in the washing system with an additive comprising 4,4 dimethyloxazolidine.
Also the composition comprising said additive.

4. claims: Kpart)-l0(part)

A method for the prevention or mitigation of fouling in basic washing systems comprising treating a liquid washing phase used in the washing system with an additive comprising isopropyl hydroxylamine.
Also the composition comprising said additive.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2008/059328

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5288394	A	22-02-1994	NONE	
US 5160425	A	03-11-1992	NONE	
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